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ABSTRACT

Spanning the annual meetings of the North Central Reading Association from 1971 to 1974, this yearbook presents papers dealing with programs and centers, materials and techniques, a new research field, and in honor of Roger S. Pepper. Papers include: "Attitudinal Factors among Marginal Admission Students" (Roger S. Pepper and John A. Drexler, Jr.); "Relationships among Reading Performance, Locus of Control and Achievement for Marginal Admission Students" (Roger S. Pepper and John S. Drexler, Jr.); "Internal Versus External Locus of Control and Performance in Controlled and Motivated Reading Rate Improvement Instruction" (James David Brandt); "The Freshman Opportunity Program: A Method of Student Assistance" (John M. Hargis); "Procedures and Structures for Individualizing a Reading and Study Skills Program" (Delores A. Ridenour); "Navajo Culture and Reading" (Merrill M. May); "The Purdue Developmental Program--Progress and Problems" (Bernard Schmidt); "A Community College Reading Program" (George A. Simmons); "Reading to Perceive Organization: A Neglected Comprehension Skill" (Joseph A. Fisher); "The Use of Peer Leaders in Study Skills Groups" (Dennis L. Nord); "Spelling and Reading Are Visual Skills" (Helen S. Wolf); "Investigations of Heart Rate and the Reading Process" (David M. Wark); and "Metaphors of Teaching Reading" (George B. Schick). (RS)

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COLLEGE AND ADULT READING

VII

The
Seventh Yearbook
of the
North Central Reading Association

Edited by
DAVID M. WARK

NORTH CENTRAL READING ASSOCIATION
ST. PAUL, MINN.
1974

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PREFACE

This is the 7th in a series of volumes factitiously called "yearbooks". The North Central Reading Association, as many people have come to realize, is the most relaxed group in adult reading. We are an association dedicated to the improvement of college reading. But the members pursue that goal informally, casually, as pleasantly as possible. Professional papers are offered each year at annual conference. But it is the interaction fostered by the papers, not their publication, which is our primary goal. Hence, there is no pressure to collect and publish a volume yearly. Herewith, therefore, College and Adult Reading VII, the report of the North Central Reading Association.

For those of you who keep track of such things, our last "year" was 1971. This current volume spans a four-year period. You will find papers from the 1971 meeting at Bloomington arranged by Nancy David, the 1972 meeting at Wheaton programmed by Father David Turner, the 1973 meeting at Kent due to Fred Davidson, and the 1974 convention at Merrill May's Purdue.

Volume VII contains one highly significant innovation. You will find three papers honoring our late colleague, Dr. Roger Pepper of Wayne State University. Roger was a dear friend to all of us in the North Central Reading Association. His untimely death was a source of personal pain. The Association, in his honor, established a memorial prize for an outstanding doctoral dissertation. It is a great pleasure to publish the winning dissertation, by Dr. James David Brandt.

ATTITUDINAL FACTORS AMONG MARGINAL ADMISSION STUDENTS

Roger S. Pepper and John A. Drexler, Jr.
Wayne State University

The purposes of this paper are to (1) show the need for considering social psychological factors which might affect the academic success of marginal admissions students; (2) review some pertinent social psychological literature which might describe these students; and (3) report a study which was an attempt to find ways to treat these students more effectively.

Introduction

Over a period of thirty years, the reading program at Wayne State University evolved from a somewhat superficial speed reading course into a well-balanced reading and study skills center. The program now includes individual and group counseling and training designed to assist a heterogeneous urban university population to develop the reading and study skills necessary for academic success.

The selective admissions policy of the University has given the reading and study skills department the advantage of working with students of good potential. That is, except for an occasional tilt of the Admissions Office's Ouija Board, these students have met the traditional criteria of high school grades and test scores predictive of ability for successful college work. They represent a cross section of the Detroit metropolitan area on such variables as religion, ethnic background, economic level, and race. The one factor they have in common is that they all met traditional entrance requirements.

The instruction in the program has primarily been of a rational nature. Lectures, discussions, and exercises on the how, where, when, and why of effective study have been employed. This approach appears to have been successful for the student with average or better preparation for college, for the successful student seeking to improve his skills, and for the student with a specific skill deficit.

Although there have been occasional experimental programs for non-admissable students in the past, the major focus of the program has been directed toward students in the above categories. Beginning with the Summer of 1968, the University initiated a program known as Project 350, for the admission of students classified as marginal and high risk. The distinction between the two categories reflects the degree to which they fall below formal entrance requirements. The students are graduates from high schools in areas which meet Federal guidelines for disadvantaged. They are recruited through the cooperative efforts of the Admissions Office, high school counselors, and a citizens' committee. These students are required to take a reading efficiency and study skills course.

The development of a viable reading and study skills program for these marginal students has now become a major concern. The majority of the students in the marginal admission project are poor, black, educationally unsuccessful, and live in the inner city. They fall in the group which Moore (1970, p. 6) said "... appear to have little prognosis for success. Yet, many of them possess those intangible qualities of creativity, personality, and tenacity which counteract the customary indicators of academic prowess."

The committment to work with marginal students is based on the assumption that this assessment, and similar statements by others, is correct. The problem is to identify the pertinent factors which affect the performance of these students. Coleman (1966) has pointed out that inner city students are the victims of inadequate and inequitable education. If so, can the traditional, more rational approach to reading and study problems effectively improve their chances for academic success? What about the debilitating effects of their previous experiences on educational attitudes, motivation, achievement goals, self-image, etc.?

What is needed are psychological descriptions of these students--especially attitudinal and motivational. Once these descriptions are made, effort should be taken to identify which factors might affect their academic performance. If certain factors can be found to affect performance significantly, investigators should endeavor to determine if and how these factors might be modified.

Description of Marginal Admission Student at an Urban University

A review of the psychological literature which might describe marginal admission students at an urban university reveals some common characteristics. Roueche (1968) describes these students as graduating from high school with a low C average, being deficient in language and math skills, having poor study habits and low motivation, having unrealistic and ill-defined goals, and representative of homes with minimal cultural advantages and a minimum standard of living. Their socio-economic level would be considered lower class. It must be remembered, however, that these are generalizations and are not common to all inner city youth nor are they common to all marginal admission students.

The factors to be reviewed here are motivation, delay of gratification, feelings of inferiority, estimation of ability and locus of control.

Motivation

Baron and Bass (1969) propose that rewards which focus on personal praise (you're good) are more effective for lower class children than rewards which focus on achievement (that's a good job). The opposite is true for middle class children (Terrall, Durkin, and Wiesley, 1959; Zigler and DeLabry, 1962; Zigler and Child, 1969). Two interpretations are offered for these findings (Zigler and Child, 1969). One interpretation states that reinforcement for black children in school is meted out for obedience and docility rather than for academic achievement. Another interpretation is that the effectiveness of certain reinforcers changes as a child develops (Havinghurst, 1970). Personal praise is a salient reward for young children, but satisfaction or self-reward at performing well becomes more salient as the child grows older. Zigler and Child (1969) state that poor children are not as likely to reward themselves for or be satisfied with a good performance as are middle class children. Havinghurst (1970) explains this by pointing to the facts that many minority group families are larger than the average family in the population and that the fathers are often absent. Because of many pressures with which the mother must learn to cope, she becomes satisfied when the child is pacified. The mother rarely dispenses reinforcement for achievement and rarely pays attention to achievement related activities. It would appear that feelings of satisfaction would have motivating properties and would be necessary for academic success in college.

Delay of Gratification

Lower class children are also less apt to delay gratification of needs. Experience has taught them to distrust promises of a better future (Mischel, 1958, 1961). Activity directed towards educational objectives requires the ability to delay gratification. Bard, Lerner, and Morris (1967) state that educational goals are not easily conceptualized by these students. Their immediate concern is with acquiring the basic physical necessities.

Feelings of Inferiority

Educationally disadvantaged students feel inadequate and inferior to other students (Moore, 1970). An explanation for this might be found in Rosenthal and Rosnow's (1969) research on experimenter expectancy which has carried over into the area of education. A teacher expects a student to function in a certain way; the student perceives the teacher's expectation and attempts to live up to the expectation. For example, many students who are capable of doing better work in school, do average or below average work because they are made to feel that they are "C" or "D" students.

Institutions of higher education may be serving to perpetuate these feelings in students. When this writer asked his reading efficiency and study skills class why they thought they were taking the course, the response was, "Because we're dummies." During counseling, marginal admission students complained of professors who began a course by stating that they weren't able to teach the Project 350 students anything the previous year and didn't expect to be able to teach this year's students anything either. One professor began a course by recognizing the *fact* that the project students were not qualitatively equal to his regular students and refused

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to give any project student a grade higher than a "C". These students are very aware of the connotations of the labels applied to them: disadvantaged, project student, marginal admission, high-risk admission.

Locus of Control

Locus of control is a variable which describes the way a person feels that his destiny is determined. It defines the extent to which individuals perceive causal relationships between their behavior and the consequences of their behavior. A person with an internal locus of control feels that he himself can determine what happens to him, whereas a person with an external locus of control feels that chance or luck determines what happens to him. Moore (1970) claims that high-risk students are quick to attribute their difficulties to their family, teachers, racism, etc. Thus, a student with an internal locus of control would say, "I got an A or B." A student with an external locus of control would say, "The teacher gave me an A or B." Coleman (1966) found that black students are more externally oriented than white students. He also found a relationship between locus of control and achievement for this group: the more a black student feels an internal locus of control, the better his grades.

Locus of Control and the Marginal Admission Student

The first factor to be researched was locus of control. This construct is derived from social learning theory (Rotter, 1954,1955, 1960, and 1966). A reinforcement serves to increase the subject's expectancy that a particular act will elicit a certain reinforcement or reward. Children learn to distinguish between activities which are causally related to reward and those which are not. The reinforcement history of an individual will determine which activities he perceives as being causally related to some reward. If a child lives in an environment where reward and punishment systems are consistent, he will learn or feel a causal relationship between his behavior and reinforcement; internal locus of control. However, if his environment maintains an inconsistent system of rewards and punishments, he will not learn causal relationships between his activity and reinforcement; he will feel an external locus of control. There is no clear cut distinction between internal and external locus of control, but there are degrees of internality and externality.

Havinghurst (1970) has pointed out that from early childhood, minority group children have been exposed to a system of rewards and punishments that has been inconsistent. For this group, there is little regularity in the meting of rewards and punishments.

A relationship between need for achievement and locus of control has also been suggested (Rotter, 1966). If an individual has a high need for achievement or is highly motivated toward achievement, it is likely that he feels he can determine the outcomes of his efforts.

Phares (1957) made the first attempt to measure locus of control. Since then, many other scales have been developed to measure this trait in an individual: i.e., Crandall (1965) developed a test for children; Coleman (1966) used a three item questionnaire in his study of equality of educational opportunity; Rotter (1966) developed the scale most widely used and known, and Gurin, et. al. (1970) developed a scale for black students.

Hypotheses

It was hypothesized that there would be significant negative relationships between locus of control and the subscale of the Brown-Holtzman (1965) Survey of Study Habits and Attitudes (SSHA). The SSHA measures an individual's study habits and his feelings toward teachers and education.

Another hypothesis was that students who felt an external locus of control at the end of a reading and study skills course would not do as well in the course as students who felt an internal locus of control. Two instructional methods were used, demonstration and lecture, to test whether individuals with differences in locus of control would respond better to different instructional methods.

Method

Design. The final design was a 2 x 2 x 2 factorial design. The variables were locus of control (internal and external), instructional method (demonstration and lecture), and instructor (two instructors taught the course using each instructional method.)

Subject. The subjects (Ss) consisted of students from Project 350 who began their college studies at Wayne State University, Detroit, Michigan in the Summer of 1970. These students were labelled marginal admission students and (1) were recruited from inner-city areas of the Detroit metropolitan area; (2) were considered economically poor; (3) had high school honor point averages ranging from 2.4 to 2.74 on a four point system; and (4) were primarily black (91%). The remaining 9% of the students were of Spanish-American and other descent.

Data for the correlational parts of the study were from 184 of these students. Data from the remaining 66 students were not used because of (1) students dropping out of the program; (2) invalid tests; or (3) students who did not have a complete battery of tests.

Forty-three students participated in the instructional method part of the study. Because students chose the section of the reading class that best fit their schedule, it was impossible to randomly assign students to the different experimental conditions. It was assumed, however, that there was no systematic factor which might lead a student to choose one section over another. To enhance the credibility of this assumption, the following hypothesis was tested: there are no differences among students in reading ability, study habits and attitudes, and aptitude between the two experimental groups. No differences between groups were found on the following scales: (1) Diagnostic Reading Survey (Triggs, 1963); reading rate, story comprehension, vocabulary, paragraph comprehension, and total comprehension; (2) Survey of Study Habits and Attitudes (SSHA) (Brown and Holtzman, 1965); delay avoidance (DA), work methods (WM), teacher approval (TA), educational acceptance (EA), study habits (SH), study attitudes (SA) and study orientation (SO); and (3) Scholastic Aptitude Test-Verbal (SATV) and Scholastic Aptitude Test Quantitative (SATQ). Random assignment was used, however, to assign an instructor to teach a certain section with a certain method.

Procedure. The limitations of a study which seeks to increase the success ration of a program with marginal admission students by looking at locus of control and instructional methods were immediately recognized. (1) Ethical considerations would not allow a control or non-treatment group to be run. No treatment group would receive less than what would normally be given a student were the study not run. (2) Instructor differences might allow different instructors to function better using different reaching techniques. It would be difficult to maintain control between instructors. (3) Section differences, these writers felt, gave each section unique characteristics. Different classes or groups might respond differently to the same teacher using the same method. In spite of these limitations, these writers felt that the study would be valuable and might at least suggest ways to control for these problems in the future.

Two instructors each taught three sections of the reading efficiency and study skills course (RE 0094). Different instructional methods were used for each section. (1) The Lecture method was the traditional method used in the basic RE 0094 course. It was the rational approach, a "how to do it" method. (2) In the Demonstration method students participated in demonstrations of each technique taught. The discussions centered around specific course content. For example, when textbook reading was covered, the students read from a chapter in a textbook, and the instructor demonstrated a technique (SQ3R) for doing this type of reading. The students also took notes during a lecture. A professor came to class and lectured on the material read in the textbook. Detailed discussion of the notes followed the lecture. The students received guided practice in studying for an exam, with emphasis on drawing comparisons and contrasts in the material being covered. They took an exam based on the textbook reading and the lecture.

Another method, discussion, was used but was eliminated from this analysis. This method consisted of attempts on the part of the instructor to draw out of the student suggestions for the same techniques presented in the lecture method. The instructor encouraged the students to discuss freely the advantages and disadvantages of each method. Both instructors thought that including the data from this condition would confound the results. They found it difficult to distinguish clearly between this method and parts of the other two methods, and they felt that the students in these sections were particularly hostile and unresponsive. The problems with this condition went beyond the scope of the present study.

The Crandall (1965) Intellectual Achievement Responsibility (IAR) scale was to be the measure of locus of control and be administered as a pre- and post-test of locus of control. The Gurin (1970) scale was rejected because not all the students were black. Moreover, it was racially oriented and might engender hostility among black students. Coleman's (1966) scale was rejected because of its brevity and because no reliability or validity scores were reported for it. The IAR scale was accepted over the Rotter (1966) scale because it distinguished between feelings for success and failure and because it was academically oriented. Although the Crandall IAR was written for children, it had previously been used with this age group (Baron and Bass, 1969). During this study, the use of the IAR scale was discarded in favor of the Rotter scale for the reasons presented in the results section.

For comparison purposes, the IAR scale was to be administered to the marginal admission students and to a randomly selected sample of regularly admitted students. Two hundred and fifty students were randomly selected from students regularly admitted to Wayne State University as freshmen for the Fall Quarter, 1970. Since there was no opportunity to bring these students together to administer the test, a copy of the IAR was sent to them with a stamped, addressed return envelope. Of the 250 students to whom these tests were sent, 116 returned the tests. Of those, 107 were usable.

The Rotter I-E scale, the Triggs' (1963) Diagnostic Reading Test, Survey Section, Upper Level, and the Brown-Holtzman (1965) Survey of Study Habits and Attitudes were administered to the students at the end of the course.

Results

There were no differences between the regularly admitted students and the project students on Crandall's IAR scale. Table I presents a comparison of these groups.

TABLE I

Comparison of Regularly Admitted (RA) and Marginal Admission (MA) Students on the Crandall IAR Scale

	Success Scale		Failure Scale	
	RA	MA	RA	MA
$\bar{X}$	13.22	12.72	12.50	12.23
s	2.69	2.09	2.74	2.12
N	107	186	107	186
	t = 1.64 (not significant)		t = 0.87 (not significant)	

The range of scores was narrow for both groups and measures of central tendency indicate that most students felt a high internal locus of control as compared to other groups who took the test (Crandall, 1965; Baron and Bass, 1970; Baron and Ganz, 1970.) Possible explanations for this are (1) the purpose of the test could be easily determined by all students who took it and its use should be restricted to younger students; (2) it was the marginal admission students' first day of college and their excitement and anticipations may have raised their scores; (3) or the orientation session in which marginal students participated may have been effective in raising their feelings in the direction of an internal locus of control.

Although there was no evidence to rule out the second and third explanations, there was supportive evidence to suggest that the first was correct. Past research would suggest that there should be a difference between regularly admitted and marginally admitted students (e.g. Coleman, 1966; Moore, 1970). Even if there were no real differences between groups on locus of control scores, one would expect there to be a wider range, or greater variance, for both groups. Beyond these arguments, 27% of the students correctly determined the nature and purpose of the questionnaire.

At this point, these writers decided not to use Crandall's IAR in the analysis and to substitute Rotter's (1966) I-E scale. The design was changed from a pre-test, post-test design to a post-test only design (Campbell and Stanley, 1963).

Table 2 shows the distribution of scores on the Rotter I-E for a group of introductory psychology students (Rotter, 1966) and for a group of marginal admission students. The marginal admission students felt a more external locus of control than did the norm group described by Rotter. This finding is consistent with the findings of past research (Rotter, 1966; Coleman, 1966; and Moore, 1970). Males felt a stronger external locus of control than females.

TABLE 2

Comparison of Rotter's (1966) Students (RS) and Marginal Admission Students (MA) on the Rotter I-E Scale

	Males		Females	
Score	RS	MA	RS	MA
21				
20				
19				
18				
17				
16				
15				
14		Q_3		
13				Q_3
12		Q_2		
11	Q_3		Q_3	
10				Q_2
9		Q_1		
8	Q_2		Q_2	Q_1
7				
6			Q_1	
5	Q_1			
4				
3				
2				
1				
$\overline{X}$	8.15	11.57	8.42	10.37
s	3.88	3.65	4.06	3.86
N	575	76	605	112

Correlations were run between the Rotter I-E scale scores and the various subscales of

Brown-Holtzman's (1965) SSHA for the marginal admission students. Statistically significant correlations were obtained and are presented in Table 3.

TABLE 3

Correlations Between Rotter I-E Scale and the Subscales of Brown-Holtzman's SSHA for Marginal Admission Students

N = 184; d/f - 182

Scale	r
Delay Avoidance (DA)	- .25**
Work Methods (WM)	- .17*
Teacher Approval (TA)	- .32**
Education Acceptance (EA)	- .38**
Study Habits (SH) = DA + WM	- .23*
Study Attitudes (SA) = TA + EA	- .37**
Study Orientation = SH + SA	- .32**

* $p < .01$

** $p < .001$

These correlations indicate that there is some common variance between the I-E scale and the SSHA. The correlations for the attitude subscales are higher than those for the study habit subscales. All the correlations are negative. Individuals who felt an internal locus of control tended to report having better study habits and attitudes than individuals who felt an external locus of control.

In the instructional methods part of the study, a three-way analysis of variance was run using post-treatment reading test scores as the dependent measures.

Reading rate. There was a main effect of instructor on this dependent measure. Instructor A's students read more quickly than instructor B's students across all conditions.

Story comprehension. There were no main effects on any of the factors in this dependent measure. There was, however, a significant interaction between instructional method and locus of control. Individuals who felt an internal locus of control scored higher than externals in the demonstration condition and higher than internals in the lecture condition. Externals scored higher than internals in the lecture condition and higher than externals in the demonstration condition. These data are presented in Table 4.

Paragraph comprehension. There was a main effect of instructor on paragraph comprehension (.01). Instructor A's students did better than instructor B's students across all conditions. Although there were no significant interactions, there was the same trend toward an instructional method by locus of control interaction. A three-way interaction approached significance at the .05 level.

Total comprehension. The main effect of instructor found in paragraph comprehension may have washed out any interaction in total comprehension (total comprehension equals paragraph comprehension plus story comprehension) (Table 5). There was a main effect of instructor in total comprehension ($p < .05$), and a method by locus of control interaction approached significance at the .05 level.

TABLE 4

Analysis of Variance:
Story Comprehension

		Instructional Method	
		Demonstration	Lecture
Locus of Control	Internal	13.2	11.4
	External	11.1	13.7

N = 43

Source	d/f	MS	F
A--Instructional Method	1	1.4726	0.1449
B--Locus of Control	1	0.1926	0.0189
A X B	1	45.4140	4.4693*
Error	39	10.1611	

* significance at<.05

Discussion

There were significant negative relationships between scores on the Rotter I-E and subscales on the Brown-Holtzman SSHA for the marginal admission students. The more an individual had positive study habits and attitudes, the more internal were his feelings of locus of control. This would suggest, as do Coleman (1966) and Moore (1970), that locus of control is a critical variable to consider when dealing with minority group marginal admission students. Should future data substantiate the relationship between locus of control and achievement found by Coleman (1966), scores on some locus of control test might be used as a selection criterion. Beyond this, investigators might endeavor to

TABLE 5

Analysis of Variance:
Total Comprehension

		Instructional Method	
		Demonstration	Lecture
Locus of Conrol	Internal	22.8	21.1
	External	21.3	25.2

N = 43

Source	d/f	MS	F
A--Instructional Method	1	11.9706	0.4645
B--Locus of Control	1	15.8106	0.6135
A X B	1	72.6000	2.8173*
Error	39	25.7692	

* significance at .10

determine whether one's feelings of locus of control could be modified.

In the instructional method portion of the study, the main effect of instructor on reading rate might have been caused by (1) some special ability of instructor A to teach reading rate better than instructor B; (2) differential emphasis on reading rate in individual lectures or during the course of RE 0094; or (3) differences in emphasis, tone, or inflection in the instructors' reading of the standardized instructions for the Triggs' (1963) Diagnostic Reading Test. The instructions state: "read as rapidly as you can, and still understand what you read." The fact that there were no differences in comprehension of this part of the test might rule out #3 as a possible alternative explanation. However, there was no real evidence to rule out or accept any of the three alternatives.

In the story comprehension dependent variable, there was an interaction between locus of control and instructional method. In the demonstration condition, students who felt an internal locus of control did better than students who felt an external locus of control. In the lecture condition, students who felt an external locus of control did better than students who felt an internal locus of control. This result differed from the original hypothesis.

A recent study by Baron and Ganz (1970) might help explain these results. They found an interaction between locus of control and mode of reinforcement (intrinsic and extrinsic). Intrinsic rewards are those which an individual gives to himself, e.g., a feeling of satisfaction. Extrinsic rewards are those which must come from outside oneself, e.g., a tangible reward or verbal reinforcement. Whereas some individuals can effectively utilize intrinsic rewards, many individuals remain dependent on extrinsic rewards (Havinghurst, 1970). Baron and Ganz predicted and found that minority group children who felt an internal locus of control responded better to intrinsic rewards than to extrinsic rewards. Minority group children who felt an external locus of control responded better to extrinsic rewards than to intrinsic rewards, and externals responded better than internals to extrinsic rewards. Baron and Ganz suggest that internals may have responded more favorably to intrinsic rewards because they might have been aware of the redundant nature of extrinsic rewards; e.g., the answer is obvious, why does he keep praising me for this?

The nature of the information given the Ss in the present situation might be similar to the Baron and Ganz study. No attempt was made to vary systematically the mode of reinforcement in either treatment group; i.e., no attempt was made to mete out extrinsic rewards. All students had access to intrinsic rewards through constant feedback of reading rate and comprehension scores in classroom exercises. However, the nature of the information presented to the students in the two conditions may have been perceived differently by internals and externals. The individuals who felt an internal locus of control may have perceived the lecture information as obvious, or unnecessary, even though they may not have previously made use of the information. Thus, they may have responded to it in the same way that they would respond to redundant extrinsic rewards. Internals may not have minded the same information in the demonstration method of the study since they were encouraged to participate in using and discussing it.

Another explanation for this phenomenon may lie in the nature of the situation. Perhaps internals responded best to an informal, less structured environment, whereas externals responded best to a more formal structured environment.

The above explanations are merely suggestions to help interpret the results of this study. No evidence has been found to augment or rule out the validity of either explanation. Further studies will have to be run to delimit the relevant variables.

While story comprehension requires an individual to report the facts that he has read, paragraph comprehension also tests skills such as interpreting what has been read and understanding the main idea of the selection. A main effect of instructor was found for paragraph comprehension as it was for reading rate. This may be explained in the same way as the effect for reading rate. A three-way interaction, however, approached significance. This might be interpreted in light of the discussion under story comprehension.

Total comprehension consists of the sum of story and paragraph comprehension. Due to the strong instructor effect in paragraph comprehension, there was a significant main effect of instructor in total comprehension. Nevertheless, the locus of control by instructional method interaction persisted and approached significance at the .05 level.

Since the institution defines success in a marginal admission student program by honor point average, longitudinal studies must be run using this dependent measure. Variations in honor point average would outweigh any variations in attitude or reading test scores.

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RELATIONSHIPS AMONG READING PERFORMANCE, LOCUS OF CONTROL AND ACHIEVEMENT FOR MARGINAL ADMISSION STUDENTS

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INTRODUCTION

At the 1970 North Central Reading Association conference, these writers presented a paper (Pepper and Drexler, 1970) which described some social psychological variables related to the achievement of marginal admission students. One phase of that paper discussed an experimental study designed to test the effects of a subject variable, locus of control, and a program variable, instructional method, on the reading performance of marginal admission students. This paper is an extension of that paper in that it tests the same relationship using achievement measures as a dependent variable and the relationships between reading performance and these achievement measures.

A short review of the 1970 paper is in order. Locus of control is a variable which defines the extent to which an individual perceives a causal relationship between his behavior and the consequences of his behavior (Rotter, 1966; Lefcourt, 1966). When an individual feels that his behavior is directly related to the outcomes of his behavior, he is said to have an internal locus of control. When an individual feels that there is no relationship between his behavior and its outcomes, he is said to have an external locus of control. It was felt that for students an attitude of "the more I study, the better my grades will be" is superior to an attitude of "my grades cannot be affected by the amount of effort I put into studying."

The other variable used was instructional method. This variable was divided into lecture method and demonstration method. These writers felt that what reading and study skills programs attempt to do is influence the habits and attitudes of students. Past research (Cohen, 1964; Rosnow and Robinson, 1967) has demonstrated that the most effective means of influencing behavior and attitudes is to have the subject participate in the influencing process. It was hypothesized that students in a demonstration-discussion type reading program would do better than students in a lecture type program.

The Triggs' Diagnostic Reading Test, Survey Section, was used as a dependent measure. Neither hypothesis was supported. Instead, statistically significant interactions were found between locus of control and instructional method. Tests of the simple effects indicated that students who felt an internal locus of control did better on reading comprehension when a demonstration instructional method was used and students who felt an external locus of control functioned better when a lecture method was used.

The present study tests the extent to which the findings of the earlier study persist through college achievement. Specifically, it tests (1) the effects of locus of control and instructional method on college honor point average and (2) the relationships among locus of control, reading performance and achievement through the use of partial correlations and multiple regressions.

METHOD

Design. The design for the first phase of the study was a 2 x 2 factorial design. The independent variables were locus of control (internal and external) and instructional method (lecture and demonstration). The dependent variable was honor point average.

The second phase of the study utilized correlational techniques, partial correlation and multiple regression, to test the extent to which reading performance and traditional predictors of achievement could predict the criterion, college honor point average.

Subjects. The subjects consisted of marginal admission students at Wayne State University. They had high school honor point averages ranging from 2.4 to 2.74 and federal guidelines defined them as being economically disadvantaged. Most of the students (91%) were black. Forty-three of these students were used in the experimental phase of the study and one hundred and eighty-four of them were used in the correlational phase.

Procedure. The students in the experimental phase of the study participated in sections of the reading and study skills course which either used a traditional lecture method of instruction or a student participation (demonstration) method of instruction. They were divided into internal or external locus of control groups by means of a median split on the distribution of locus of control scores.

The Rotter (1966) Internal-External Locus of Control (I-E) Scale and the Triggs' (1963) Diagnostic Reading Test, Survey Section, Upper Level, were administered at the end of the reading course to all marginal admission students. After one full year of study, achievement measures (honor point average) were collected on the students from existing university records.

PHASE I
RESULTS AND DISCUSSION

Table I shows that there were no significant effects of locus of control, instructional method, or instructor on honor point average after one full year of study. The mean honor point average for the sample was 1.983 with a standard deviation of .453. These data did not support the hypothesis that internals would have higher honor point averages than externals.

Data was also collected to determine whether locus of control or instructional method was related to a student's remaining in the program for the full year. Students in the marginal admission project were guaranteed that they would not be excluded from the university for academic reasons for at least one full school year. This means that any student who left, chose to do so. A contingency table was set up and chi squares were run to test this. The overall chi square was significant (chi square = 51.364; $p < .001$). The other significant relationship was locus of control by persistence. A larger proportion of externals chose to leave the university than internals (Table 2).

The findings on measures of achievement must be interpreted in light of the findings on the persistence measure. Perhaps the lack of a relationship between locus of control and college HPA can be explained by the fact that more externals chose to leave than internals. There was, in effect, only a select subsample of externals remaining when the achievement measures were taken. It is possible that only those with high honor point averages remained. There is no way to determine the variance in these measures for which persistence would have accounted. Because of this, the finding of no relationship between locus of control and measures of achievement is inconclusive.

TABLE I

Analysis of Variance of the Effects of Locus of Control, Instructional Method and Instructor on Honor Point Average

Source	df	MS	F
A (locus of control)	1	369982.976	1.7888
B (Instructional method)	1	38455.604	0.1859
C (Instructor)	1	301283.752	1.4567
A*B	1	101378.533	0.4902
A*C	1	121823.687	0.5890
B*C	1	29370.605	0.1420
A*B*C	1	55234.689	0.2671
Within	30	206829.014	

TABLE 2

The Relationship Between Locus of Control and Persistence: Chi Square and Frequencies

	Locus of Control	
	Internal	External
Stay	21	17
Leave	1	4

Chi square = 34.187; $p < .001$

PHASE II
RESULTS AND DISCUSSION

No relationship was found between locus of control and honor point average for the larger group of students ($r = .039$). However, it was found that a larger proportion of externals left the university than internals. Table 3 points this out. Again, it was felt that this latter finding renders the result of no relationship between I-E and honor point average inconclusive.

Considering the fact that more externals than internals chose to leave the university, the correlation between locus of control and college honor point average (HPA) after one full year of study was insignificant. Even when the effects of traditional predictors, high school grades and Scholastic Aptitude Test scores (SAT) were controlled, the partial correlation between locus of control and HPA was only .069.

TABLE 3

The Relationship Between Locus of Control and Persistence to Stay in School: Frequencies and Chi Square

	Locus of Control		
	I	E	Total
Stay	77	63	140
Leave	15	29	44
Total	92	92	184

Chi square = 5.857 with 1 df. $p < .05$

Although many of the correlations were significant, subscales of the Triggs' reading test accounted for very little of the variance in HPA (Table 4). Again, partialling out the effects of traditional predictors did little to increase the correlation (Table 5). The differences in sample size can be attributed to incomplete data on all subjects. In general, the partial correlations were not very different from the correlations.

A stepwise multiple regression was used to determine whether locus of control and reading performance would add to the prediction of college success for these students. First it was necessary to determine how well traditional predictors (high school honor point average and

TABLE 4

Correlations Between Pre- and Post-Test
Reading Performance and College HPA

	Pre-test	Post-test
Reading Rate	.249***	.239***
Story Comprehension	.175**	.106
Vocabulary	.342***	.300***
Paragraph Comprehension	.229***	.191**
Total Comprehension	.149*	.153*

Pre-test N = 194
Post-test N = 192

* $p < .05$
** $p < .01$
*** $p < .001$

TABLE 5

Partial Correlations Between Pre- and Post-Test Reading Performance and College HPA Controlling for High School Honor Point Average and SAT Scores

	Pre-test	Post-test
Reading Rate	.240***	.230***
Story Comprehension	.186**	.117
Vocabulary	.337***	.283***
Paragraph Comprehension	.225**	.196**
Total Comprehension	.137	.144*

N = 190

* $p < .05$
** $p < .01$
*** $p < .001$

Scholastic Aptitude Test) predict success for this group. It must be remembered that the present study treats a group with a narrow range of abilities. Thus, one could not expect these relationships to be as great as relationships among the measures were an entire student body being considered.

Table 6 shows the stepwise regression using high school HPA and SAT scores as predictors of college HPA for this group. These variables accounted for very little of the variance for this group and in no case were the regressions significant. Although one would expect that these coefficients. would be smaller than those for a total student body, it is surprising that they were not higher than found. The addition of locus of control did nothing to augment predictability. In no case was the multiple regression significantly different from zero.

TABLE 6

Multiple Regression Using High School HPA, SAT scores and Locus of Control as Predictors of College HPA of Marginal Admission Students

Variable	Multiple r	df	F
High School HPA	0.136	1/159	2.998
SAT	0.178	2/158	2.593
Locus of Control	0.191	3/157	1.973

The addition of the subscales of the Triggs' reading test increased the predictability of success for marginal admission students over traditional predictors. Tables 7 and 8 present this for pre- and post-test scores respectively. The variables are listed in the order of their successive addition to the overall stepwise regression equation. The multiple r for pre-test scores is larger than the multiple r for post-test scores.

An important finding is the greater predictability of these students' college grades by adding reading test scores to a multiple regression. It is not intended that these data be used in the selection of students. They do, however, help in the general understanding of the variability in HPA for marginal admission students. Programs, for example, could be restructured in light of these findings which, although not large, do account for 24% of this variability. This is a larger proportion of variation than could have been accounted for previously. Hopefully, the addition of attitudinal and motivational factors will further increase the multiple regression and further reduce the amount of unexplained variability.

TABLE 7

Multiple Regression Using Locus of Control, Pre-Test Reading Performance, High School HPA and SAT as Predictors of College Grades

Variable	Multiple r	df	F
Vocabulary	0.336	1/159	20.250*
High School HPA	0.401	2/158	15.135*
Reading Rate	0.415	3/157	10.898*
Total Comprehension	0.423	4/156	8.498*
Paragraph Comprehension	0.463	5/155	8.461*
SAT	0.484	6/154	7.856*
Locus of Control	0.490	7/153	6.868*

* $p < .01$

TABLE 8

Multiple Regression Using Locus of Control, Post-Test Reading Performance, High School HPA and SAT as Predictors of College Grades

Variable	Multiple r	df	F
Vocabulary	0.280	1/159	13.575*
High School HPA	0.353	2/158	11.222*
Reading Rate	0.400	3/157	9.943*
Story Comprehension	0.406	4/156	7.708*
Total Comprehension	0.418	5/155	6.583*
Locus of Control	0.423	6/154	5.586*
SAT	0.428	7/153	4.895*

* $p < .01$

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INTERNAL VERSUS EXTERNAL LOCUS OF CONTROL AND PERFORMANCE IN CONTROLLED AND MOTIVATED READING RATE IMPROVEMENT INSTRUCTION

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INTRODUCTION

Foster and Gade (1973), among others, have observed an association between Rotter's (1954, 1966) Internal vs. External (I-E) locus of control personality dimension and college grade point average. Internals (I's) typically have a higher grade point average than Externals (E's). I's tend to perceive that they have a considerable degree of personal control over reinforcing events in their lives; E's tend to perceive that events are due to factors beyond their personal control. Of particular interest to the field of study skills instruction at the college level is how to work with the externally oriented student to make his survival through college more likely. An obvious approach would be to modify the E personality to be more in line with an internally oriented personality. Such global approaches, however, meet several limiting factors. The resources, class sizes, and time restraints decrease the probability of successfully modifying a generalized personality trait. The task then becomes how to successfully modify some of the specific behaviors that E's engage in that affect their college performance.

James (1965) and Shepel and James (1973) have proposed that learning situations or tasks can be ordered on an Internal vs. External dimension independently of personality variables, according to the degree reinforcements are controlled by the subject versus the degree to which they are controlled by external factors.

It was further proposed that I's will perform better than E's in internally oriented learning situations, and E's will perform better than I's in externally oriented learning situations.

The present study investigated the performance of I's and E's in two reading rate instruction approaches. Harris (1970) has differentiated two types of approaches to increase reading rate. The _controlled_ approach relies on the use of mechanical devices to improve reading rate. The _motivated_ approach is based on the assumption that the major causes of slow reading are lack of motivation to improve speed and lack of practice. From James' (1965) definitions the _controlled_ approach was determined to be an _externally_ oriented learning situation, and the _motivated_ approach was determined to be an _internally_ oriented learning situation. Sixty-three pilot study subjects rated the _controlled_ reading rate instruction more _externally oriented_ than the _motivated_ reading rate instruction after they had participated in a four-week reading rate instruction program. A high positive correlation was expected between the I-E personality dimension and improvement in reading rate, without significant change in reading comprehension, for subjects receiving the controlled reading instruction. A high negative correlation was expected between the I-E personality dimension and improvement in reading rate, without significant change in reading comprehension, for subjects receiving the _motivated_ reading instruction.

METHOD

Subjects

Female and male students from study skills classes at The Ohio State University, Summer quarter, 1973, volunteered for participation in a reading rate improvement course. Twenty female and thirty-five male volunteers were randomly assigned to four experimental and a fifth delayed-treatment control group. The compositions of the groups were controlled by assigning equal numbers of female subjects to each group.

No significant differences were uncovered between the five groups on the following variables: year in college, age, intelligence, I-E personality orientation, initial reading rate and initial reading comprehension.

Treatments

Two instruction approaches to increasing reading rate were conducted which occupied different points along an internal vs. external locus of control dimension for learning situations. The controlled instruction was ascertained by the experimenter to be oriented toward the external end of the dimension and the motivated instruction toward the internal end of the dimension.

The controlled approach included using the Science Research Associates' Reading Accelerator Model IV, comprehension tests, and interesting reading material. The Reading Accelerator was a device which used an opaque shutter which descended down the reading page driven by a spring powered motor with a wide range of speeds. Eight group practice sessions were held twice a week for one hour. Subjects at the first practice session adjusted the rate controller of the Reading Accelerator to a rate equivalent to their base rate determined by pre-treatment testing. The subjects then read the prescribed selection of reading material at the controlled rate. After completing the selection, the subjects responded to a comprehension test and corrected their responses with a scoring key provided by the instructor. Whenever a subject scored greater than 70% on the comprehension test, he was instructed to increase the rate controller at the next practice session to a rate 15 per cent faster than his previous rate.

The motivated approach consisted of using warm-up reading, timed reading tests, comprehension tests, individual reading graphs, and interesting reading material. Warm-up readings consisted of having subjects, at the signal of the instructor, read at a comfortable pace for the first warm-up trial. At the end of the trial, the subjects determined how many lines they had read and increased this number by 20 per cent. Next, they counted out the increased number of lines from where they had left off on the first trial. During the second warm-up trial the subjects attempted to read all of the lines they had counted out within the same time interval as the first trial. This process was repeated for four warm-up trials each group session, increasing the amount to read by 20 per cent each trial. The time interval for each warm-up trial was controlled by the experimenter, and was gradually increased during the four weeks of group practice sessions. During the first week the warm-up trial length was one minute, the second week to two minutes, the third, three minutes and the fourth week, four minutes.

Following the four warm-up trials, the subjects were administered a timed reading test which gradually increased in length over the eight group sessions. At the signal of the instructor, subjects began reading the selected material assigned for that session. When a subject completed the selection, he raised his hand and the instructor verbally informed him how many minutes he had been reading.

The subject completed a multiple choice comprehension test of the material he had just read, and scored his own responses with a scoring key issued to each subject.

Reading rate in words per minute, and comprehension percentage, were computed by the subject and recorded by him on his individual reading graph.

The practice reading material was identical for both the controlled and motivated instruction approaches. Eight reading selections were used which progressively increased in length from 2,231 to 9,378 words. The reading ease of the selections varied between "difficult" and "fairly difficult" for college populations from Flesch's (1951) procedures for computing reading ease. The articles varied slightly in human interest with generally an "interesting" rating as calculated by Flesch's (1951) procedures. The content of the practice reading material consisted of authoritative essays concerning topics felt by the experimenter to be currently popular among college students.

Procedure

Four experimental groups, two receiving controlled instruction and two receiving motivated instruction, met twice a week for eleven one-hour sessions. The first two sessions and the last session were reserved for pre- and post-treatment testing with eight intervening reading instruction sessions. One female and one male instructor administered classes using each of the reading rate instruction programs. In addition, one delayed-treatment control group was included. The treatment assignments of the groups were as follows:

Group	n	Reading Rate Instruction	Instructor
1	11	Controlled	A (female)
2	12	Motivated	A
3	12	Motivated	B (male)
4	10	Controlled	B
5	10	Delayed Treatment Control Group	

The subjects met for two pre-testing sessions before being divided into their five groups. The first pre-testing session involved the administration of the Gamma test of the Otis Quick Scoring Mental Ability Tests and Form A of the Nelson-Denny Reading Tests. During the second pre-testing session Rotter's (1966) I-E Scale and The Canadian History Test from the Robinson and Hall (1949) reading test series were administered. Rotter's (1966) I-E Scale was used to assess the personality dimension of Internal vs. External locus of control. Rotter's instrument was scored to obtain the total score and the Felt Mastery and Political Affairs subscales proposed by Mirels (1970). At the end of the second pre-testing session subjects were informed of their group assignments and the following message was read:

> Over the next four weeks two reading improvement programs will be conducted. Some of you will be involved in one program and some of you will participate in the other. Details about the program will be discussed at your first session, so I won't answer questions about that now. However, let me assure you that from what reading experts know about these two programs there is no reason to believe that either method is superior, more effective or better than the other. They are both just as good. Participants

> in both programs can expect, on the average, a 30% increase in their reading rate, without any drastic change in their comprehension. At the end of the program we will again give you some reading tests to see how much you have improved. Are there any questions about when or where your reading class will meet? (pause) That is all for today. Thank you.

After eight instruction sessions, the experimental groups met for the final post-testing session. Subjects were administered Form B of the Nelson-Denny Reading Tests, and The Russian History Test from the Robinson and Hall reading test series. The delayed treatment control group was administered Form B of the Nelson-Denny Reading Test, and The Russian History Test at their first group session which approximated in time the final testing session of the four experimental groups.

RESULTS

The means and standard deviations of pre- and post-instruction differences in reading rate and comprehension from the Nelson-Denny and Robinson and Hall reading tests are presented in Table I.

Four single-factor analyses of variances with unweighted means solutions for unequal group sizes, were computed on the changes in reading rate and comprehension from the Nelson-Denny and the Robinson and Hall reading tests. The results of the analysis for change in reading rate on the Nelson-Denny reading tests are summarized in Table 2.

Table 2 reveals that there is a significant difference among the five treatments. Further

TABLE 1

MEAN CHANGES AND STANDARD DEVIATIONS IN READING RATE AND COMPREHENSION FOR TREATMENT AND CONTROL GROUPS.

Group	Rate Change on the Nelson-Denny Reading Tests		Rate Change on the Robinson and Hall Reading Tests		Comprehension Change on the Nelson-Denny Reading Tests		Comprehension Change on the Robinson and Hall Reading Tests	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1 (Controlled)	12.4	22.39	27.5	58.61	0.1	9.79	2.3	6.02
2 (Motivated)	77.8	48.10	156.6	101.35	1.6	17.87	4.5	9.27
3 (Motivated)	81.6	38.58	114.6	71.31	4.2	16.87	4.5	7.14
4 (Controlled)	20.3	54.36	6.6	109.26	0.5	13.00	0.0	5.25
5 (Control Group)	9.3	12.70	2.0	30.02	3.8	10.54	4.4	5.02

TABLE 2

Analysis of Variance of Change in Reading Rate on the Nelson-Denny Reading Tests

Source of Variation	SS	DF	MS	F
Treatments	219114.33	4	54778.58	7.88*
Experimental error	347546.05	50	6950.92	
Total	566660.38	54		

* $p < .01$

analysis with a Newman-Keuls analysis for groups with unequal sizes is presented in Table 3.

A schematic summary of Table 3 would be where groups underlined by a common line do not differ significantly, and groups not underlined by a common line do differ significantly:

$$\underline{2 \qquad\qquad 3} \qquad \underline{1 \qquad\qquad 4 \qquad\qquad 5}$$

Groups which received the motivated reading instruction (2 and 3) increased their rate significantly more than groups which received the controlled reading instruction (1 and 4) and no specific reading instruction (group 5). Groups which received the controlled reading instruction did not improve more than the control group.

A significant difference was also obtained among the five treatment groups for change in reading rate on the Robinson and Hall reading tests. The results of this analysis are summarized in Table 4.

Table 4 reveals there is also a significant difference among the five treatments on this variable. Furtheranalysis with a Newman-Keuls analysis for groups with unequal sizes is presented in Table 5.

The schematic summary of Table 5 presented below reveals that groups which received the motivated reading instructions (2 and 3) increased their rate significantly more than groups which received the controlled reading instruction (1 and 4) and no specific reading instructions (group 5).

$$\underline{2 \qquad\qquad 3} \qquad \underline{1 \qquad\qquad 4 \qquad\qquad 5}$$

Groups which received the controlled reading instruction did not improve more than the

TABLE 3

Newman-Keuls Tests of Differences Between All Possible Pairs of Means for Change in Reading Rate on the Nelson-Denny Reading Tests

Groups		5	4	1	3	2
	Means	2.0	6.6	27.5	114.6	156.5
5 (Control Group)	2.0		4.6	25.5	112.6*	154.5*
4 (Controlled)	6.6			20.1	108.0*	149.9*
1 (Controlled)	27.5				87.1*	129.0*
3 (Motivated)	114.6					41.9
2 (Motivated)	156.5					

*$p < .05$

TABLE 4

Analysis of Variance of Change in Reading Rate on the Robinson and Hall Reading Tests

Source of Variation	SS	DF	MS	F
Treatments	59247.78	4	14811.95	9.87*
Experimental error	75017.42	50	1500.35	
Total	134265.20	54		

* $p < .01$

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TABLE 5

Newman-Keuls Tests of Differences Between All Possible Pairs of Means for Change in Reading Rate on the Robinson and Hall Reading Tests

Groups		5	1	4	2	3
	Means	9.2	12.0	20.3	77.8	81.6
5 (Control Group)	9.2		2.8	11.1	68.6*	72.4*
1 (Controlled)	12.0			8.3	65.8*	69.6*
4 (Controlled)	20.3				57.5*	61.3*
2 (Motivated)	77.8					4.3
3 (Motivated)	81.6					

* $p < .05$

control group. These results are consistent with those obtained by the Nelson-Denny reading tests.

Analyses of changes in reading comprehension from the Nelson-Denny and Robinson and Hall reading tests also obtained consistent findings. Analysis of variances for the treatment and control groups uncovered no significant differences for reading comprehension scores on both the Nelson-Denny and Robinson and Hall reading tests. Summarizes of the analyses are presented for the Nelson-Denny and Robinson and Hall reading tests in Tables 6 and 7, respectively.

To test the hypotheses concerning the association of the I-E personality trait dimension with improvement in reading rate and comprehension in controlled and motivated reading instruction approaches the following procedures were utilized. Pearson r correlation coefficients were computed between the three measures of the I-E dimension (I-E Scale total score, Felt Mastery subscale, and Political Affairs subscale) and reading rate and comprehension scores from the Nelson-Denny and Robinson and Hall reading tests for each of the five groups. The correlation coefficients are presented in Table 8. Multiple t ratios were computed on these correlation coefficients with correlations exceeding $p<.05$ level indicated with an asteric.

Correlations significantly different from zero were obtained only with the control group (group 5) for changes in reading rate and comprehension on only the Nelson-Denny reading tests. The hypotheses concerning the association of the I-E dimension and performance in controlled and motivated reading rate instruction approaches were not supported.

TABLE 6

Analysis of Variance of Change in Reading Comprehension on the Nelson-Denny Reading Tests

Source of Variation	SS	DF	MS	F
Treatments	166.80	4	41.80	.63
Experimental error	3324.58	50	66.49	
Total	3491.38	54		

TABLE 7

Analysis of Variance of Change in Reading Comprehension on the Robinson and Hall Reading Tests

Source of Variation	SS	DF	MS	F
Treatments	153.24	4	38.31	.19
Experimental error	10125.60	50	202.51	
Total	10278.84	54		

James D. Brandt

TABLE 8

CORRELATION COEFFICIENTS BETWEEN MEASURES OF THE I-E DIMENSION AND CHANGES IN READING RATE AND COMPREHENSION.

	Rate Change (Nelson-Denny)	Rate Change (Robinson and Hall)	Comprehension Change (Nelson-Denny)	Comprehension Change (Robinson and Hall)
Group 1 (Controlled)				
I-E Scale total score	.40	.14	.03	.06
Felt Mastery subscale	.28	-.10	.18	.16
Political Affairs subscale	.46	.10	.01	.01
Group 2 (Motivated)				
I-E Scale total score	-.12	.05	-.40	-.02
Felt Mastery subscale	-.32	-.03	-.38	-.33
Political Affairs subscale	.09	.09	-.16	.11
Group 3 (Motivated)				
I-E Scale total score	-.57	-.36	-.19	-.20
Felt Mastery subscale	-.35	-.14	-.38	-.41
Political Affairs subscale	-.45	-.44	.29	.15
Group 4 (Controlled)				
I-E Scale total score	.06	-.19	.03	-.45
Felt Mastery subscale	.39	-.15	-.02	-.24
Political Affairs subscale	-.45	-.10	.27	.00
Group 5 (Control Group)				
I-E Scale total score	.65*	-.46	-.78*	.26
Felt Mastery subscale	.77*	-.43	-.58	.21
Political Affairs subscale	.68*	-.22	-.61	.27

*$p < .05$

DISCUSSION

The present study was designed to compare the effectiveness of four reading rate instruction treatments and a non-specific treatment control group and also to investigate the association of the I-E locus of control personality dimension with improvement in reading ability resulting from four learning situations and a fifth control condition. The results supported the relative effectiveness of *motivated* instruction over *controlled* instruction and a non-specific treatment control group. The results did not support the hypotheses concerning the association of the I-E personality dimension and improvement in reading ability.

The data indicated that the *motivated* reading rate instruction approach was significantly more effective in increasing reading rate than the *controlled* reading rate instruction approach and a non-specific treatment control group, without affecting reading comprehension. These significant results were consistent for groups administered the *motivated* instruction by two different instructors and measured by two different standardized reading tests.

Observation of the subjects' performance on the practice reading material during the instruction sessions indicated little difference in progress in improving reading rate between groups receiving the *motivated* and *controlled* instruction. Comparisons of mean reading rate and comprehension scores from each instruction session yielded no significant differences between the four specific treatment groups (groups 1 through 4). Only the data from the difference scores between the pre- and post-assessment using standardized reading tests revealed any significant differences in improvement of reading rate between the experimental groups. Also, the mean reading rate observed during the last instruction session before the final testing session was for all groups notably faster than the rate assessed on the standardized reading tests.

An interpretation to account for this data is that subjects receiving the motivated instruction perceived the final testing session as similar to the reading tasks completed during their motivated reading rate instruction. It is proposed that their expectation for successfully increasing their reading rate generalized from the instruction sessions to the standardized reading tests of the final testing session. This generalized expectancy influenced the motivation of these subjects affecting their performance during the post-testing session. Subjects receiving the controlled instruction perceived the standardized reading test as dissimilar to their experience in the controlled reading rate instruction program. These subjects were not allowed to use the Reading Accelerator nor could they rely on the steps of the reading instruction program as they had been encouraged to do during the instruction sessions. The subjects might not have generalized their expectancy of successfully increasing their reading rate to the post-testing session because it was perceived as dissimilar. These subjects attributed their success in increasing their reading rate to the machine and the steps of the reading program; therefore, they had no basis to generalize their expectancies to the standardized reading tests.

James (1957) presented a similar argument as an explanation of the results obtained in his study of the performance of subjects in skill and chance learning situations. James presented his subjects with a difficult line judging task described to the subjects as a "perceptual discrimination" task. One group of subjects received the instructions that success on the task was due to the skill of the subject. The other group was instructed that success was purely a chance matter since the task was so difficult. Results of these procedures were that the first group generalized their measured expectancies of success to a new but similar task to an extent significantly greater than subjects in the second group. James' explanation was that the second group perceived the new situation as dissimilar to the original learning situation, and, therefore, did not generalize their expectancies.

The correlational analysis of the relation between measures of the I-E personality dimension (I-E Scale total score, Felt Mastery subscale, and Political Affairs subscale) and improvement in reading rate and comprehension yielded equivocal support for the thesis of this study. Correlations significantly different from zero were found only for subjects in the control group. High positive correlations were obtained between all three measures of the I-E personality dimension and change in reading rate on the Nelson-Denny reading tests. A high negative correlation was obtained between I-E Scale total score and change in comprehension scores on the Nelson-Denny. Congruent findings for both rate and comprehension were not obtained with the Robinson and Hall reading tests.

Ducette and Wolk (1972) expressed one viewpoint which might explain the high correlations obtained by the control group, and the nonsignificant correlations obtained by the specific treatment groups. These researchers argued that any experimental procedure that allows subjects to develop specific expectancies of success for a particular learning situation, either as a function of overstructuring the task or repeated exposure to the task, results in a lessening of the impact of subjects' I-E personality trait dimension on learning and performance. Since subjects were repeatedly exposed to a learning situation in this study, they may have developed specific situational expectancies of success which were independent of any generalized I-E personality dimension. Through repeated exposure the specific expectancy increased in influence, and the I-E personality dimension decreased in importance. From this interpretation, correlations significantly different from zero were obtained by the control group because subjects in the control group were in a situation less conducive to the development of specific expectancies. The I-E personality variable, as a generalized expectancy, was therefore a more important factor in determining the performance of subjects in the control group. Also, the increased importance of specific expectancies in the specific treatment group would be expected to result in generally smaller and frequently negligible correlations between the I-E personality dimension and performance in controlled and motivated reading rate instruction, as was observed in the data.

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THE FRESHMAN OPPORTUNITY PROGRAM: A METHOD OF STUDENT ASSISTANCE YIELDING A SUCCESSFUL OPEN-DOOR POLICY

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The "Open Admission" dilemma has ebbed greatly during the first two years of the present decade due to declining enrollments at many universities. The problem was one of paramount importance during the decade of the 1960's, however, with the arrival on the college campus of the post-war babies. Virtually every American institution of higher education was faced with considering, at least, an admissions program which would eliminate certain applicants, due to space and personnel shortages. Many schools adopted a selective admissions program, and used the high school success factor, a test score, or a combination of these, as the means of screening applicants. The student who failed to qualify was usually encouraged to try his luck at a regional campus or community college. Enrollments at these institutions consequently soared upward.

This selective admission spurred discussion within and out of the academic communities concerning its justification. Those institutions who chose to limit enrollments were quick to make the point that this qualification system of admission strengthened their academic programs through the elimination of low achievers. The point was further justified by the fact that this "risk" student would be welcomed on campus after he had proven his competence at the community college.

Other universities were hesitant to "close the admissions door" in this manner. They were desirous of maintaining academic excellence, however, and of keeping pace with those whose programs were strengthened through this elimination process. Out of this search for excellence came varied programs of a remedial nature designed to quickly build the skills that are necessary for university academic success, or to eliminate those students who could not, or would not, measure up to academic standards.

These programs suffered growing pains and some were eliminated after repeated attempts at changes which would help them to accomplish their purpose. Those which survived the changes and remained grew in sophistication to the point that they have become successful models. With the present trend of enrollment declines, many of those institutions which formerly restricted admissions have "reopened" their doors to any qualified applicant. Likewise, they have adopted, or are considering, programs similar to the successful models which proved themselves during the sixty's.

One such program has existed at Indiana State University since its inception in 1966. The Freshman Opportunity Program was developed by the University's faculty senate for the purpose of providing applicants who were low achievers in high school with an admissions opportunity.

The program was limited to graduates of Indiana high schools, and included all applicants who finished in the lower thirtieth percentile of their high school class. The initial program was offered during the five-week summer sessions only. It consisted of periodic group counseling sessions, administered by the Academic Advisement Center, where academic skill deficiencies were assessed. While in the program, members were required to enroll in English 101 during the first summer session and in either Sociology 120 or Life Sciences 112S during the second. These were regular freshman-level classes offered to all students of the University, not special sections designed for members of this program. The retention standard for unconditional admission to the University for the fall semester was the attainment of a 1.30/4.00 GPR, the same as was required of any student. The program numbered 160 students during the first summer term, and 172 for the second. Of this number, thirty percent (48 and 52 respectively) failed to make the necessary 1.30 GPR.

The program was then expanded to include the spring semester in 1967. A mandatory class load of freshman-level courses numbering thirteen semester hours was required of students in this program. Of the 95 members, 46 (48%) failed to achieve the minimum GPR.

The program, as it was originally designed, continued as the Admissions avenue for these "risk" students through the summer sessions, 1968. Concern for its effectiveness grew among the University's faculty with the completion of each period of operation. It was constantly reviewed and suggestions for improvement or abolition increased in number.

A Special Faculty Commission to Study Students of Low Academic Ability was constituted in September, 1967. It had as its purpose "to review the whole problem of students of low academic ability and the possible need for a permanent school designed for them."[1]

The Commission reported in its findings:

> The admission of significant numbers of low ability students creates a problem of two-fold aspect; from the point of view of these students, it seems hardly a kindness to encourage, even tacitly, participation in the regular academic program for which, as evidence strongly suggests, they are ill-suited; from the

> point of view of faculty and of students above the thirtieth percentile, the academic progress of those capable of doing college level work is retarded by the presence of a number of low ability students.[2]

The Commission recommended that the program in its present form be abolished and a preparatory program developed and implemented. Entrants who graduated in the lower thirtieth percentile of their high school classes would be required to successfully complete the preparatory classes. Skills in English, mathematics, reading, and other critical areas would be taught, but no university credit would be given. The Faculty Council accepted the Commission's report in May, 1968, but it did not accept its recommendations, thus abolition did not occur.

The Academic Enrichment and Learning Skills Center was established in the spring semester, 1969. A non-credit course was established and required of all members of the FOP who matriculated during that semester. The course was taken in conjunction with the student's schedule of regular classes. It met within the Center, with the regularity of a three-semester hour class.

The Freshman Opportunity Program continued with this method of operation through the spring semester, 1972, when it was further expanded to include the fall semester. Student success by program members since the 1969 changes has been such that the FOP has gained acceptance by the University faculty as a viable unit capable of equipping its members with skills necessary to compete, and succeed, in the institution. While exact figures are incomplete, there is speculation that members of recent semesters have a smaller failure ratio than regularly-admitted freshmen. Further discussion is now focused upon the feasibility of extending the offerings of the course to students of any high school graduation level who feel that they can benefit from its offerings.

The purpose of this special class is two-fold. First, it is designed to offer the students a "home base" while making the adjustment to the University environment. The teachers endeavor to get personally acquainted with each student and to demonstrate a genuine interest in his activities. The atmosphere is such that the student is made to feel that he can come to the center, and to his teacher, with any problem, whether it is personal, academic or philosophical. This teacher also serves as his academic counselor and advisor in the selection of classes.

The second purpose of this class is to keep a close check on each student's progress with his academic coursework and to identify problems when they arise. The teacher and student then work on a one-to-one basis in assessing the source of the problem and its remediation.

The classes are organized in a two-phased manner. From registration through the first third of a semester, the classes meet in a large group within the center. At this time study skills, reading skills, note-taking, test-taking, and theme-writing skills, are discussed. Programmatic aids of a mechanical nature are utilized heavily during this period in covering the skills material. Individual conferences with the teacher constitute a large part of this time, also. This allows the student and teacher to begin to identify and work toward alleviating basic skill deficiencies when they exist, and it gives the student a period of time to get involved with his academic coursework and to identify problems which might arise within it.

The remaining two-thirds of the term is utilized in a series of tutorial sessions with the teacher for assistance in academic course problems as is needed, in the building of basic skills as is needed, or with enrichment materials such as speed reading, higher level mathematics, foreign languages, or combinations of the above activities, as the desire exists.

Further, group trips to cultural centers, to the library for the purpose of examining research techniques, and to listen to lecturers of special interest are conducted. Group discussions of political, moral, or contemporary social issues are encouraged, with the emphasis placed upon locating additional information on the issues.

It is the intent of this program to emphasize and reinforce the positive aspects of student ability, and to work toward the alleviation of deficiencies which limit these successes. Research indicates that programs which place an emphasis upon the student and his understanding of himself, his goals, and his abilities, rather than attempting only to remediate his disabilities, have a better chance of succeeding. C.J. Calitri writes:

> ...there is some consensus among those who have been working with the educationally mismanaged since 1959 that the more successful programs were not remedial in concept. They were designed to help young people become aware of themselves, of their abilities, of their handicaps, and of the delicate balances between what one wants to do and what one can do.

The Freshman Opportunity Program at Indiana State University has proven itself to be one successful answer to the "Open Door--Risk Student" dilemma. It is this writer's opinion that, while there are other alternatives to this program which will achieve successful ends, universities considering remedial programs for "low-ability" students might investigate the philosophical base of programs similar to this. It is certain that an approach which attempts only to identify and solve deficiencies is reinforcing the problem rather than arriving at solutions.

FOOTNOTES

1. The Commission's Report to the President and to the Faculty Council, No Date. Introduction, p. 1.

2. Ibid., pp. 2-3

3. C.J. Calitri, "Open Enrollment: Ticket to Reality", Teachers College Record, LXXII, (September, 1970), p. 82.

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PROCEDURES AND STRUCTURE FOR INDIVIDUALIZING A READING AND STUDY SKILLS PROGRAM

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One need not search too long or too far to find articles enumerating the value of individualized reading/study skills programs. These articles are replete with lists of materials used and statistics on student improvement as indicated by grade point averages and/or pre- and post-test scores. Lacking in this literature is a detailed account of just what procedures must be followed when an established program makes a complete changeover from the traditional classroom structure to a fully individualized program. This paper is an account of the procedures followed when one program made such a change and is presented in the hope that it may make things easier for others who desire to institute such a program. It was my responsibility to design and implement a change.

One of the first things I did was to visit the director of our counseling center. I wanted to know how they kept track of their large clientel and what kinds of records they found helpful in maintaining a smooth running program. Although there are more differences than similarities between the two programs, the information gleaned from them gave me some needed insight into what we would require.

It was important to decide upon the kind of records that would be needed by the students, the instructors, and the office to best expedite the proposed structure.

Each student is provided with a folder that is as simple as possible because complicated record keeping can and does discourage students. Each folder contains the following items:

1. a personal information sheet to be used by the counselor
2. a calendar for noting materials with which they work
3. two graphs, one for plotting rate and comprehension scores of timed reading and one for controlled reader films
4. an answer sheet designed for use with any of the reading materials
5. an answer sheet designed for use with the controlled reader
6. a reading skill and materials reference sheet (Table 2) which enables the student to seek out additional materials in given areas without having to consult with the instructor. This gives the student the freedom to accept or reject certain materials based on their own needs and personal preferences.
7. a contract to be signed by each student.

Since work for each student is prescribed individually, the instructor needed a record of the students' test scores, personal assessments of needs and a record of the materials and procedures being prescribed. Each teacher is provided with a large filing box and 5x8 cards. One card is filled out with the aforementioned information for each student, and each time a conference is held with the student a note is made of it on the card with a brief notation of what transpired during the conference, and the recommendations that are made.

Each counselor also keeps what we refer to as contact sheet. Down the left hand side of this sheet is listed all the counselor's students and across the top are the dates for each week in the quarter, i.e., week of October 9, etc. The letter "B" is used to indicate the initial or beginning conference, check marks show subsequent conferences and "T" indicates the student's termination in the program. This sheet is totaled and handed to the secretary at the end of each week. She in turn records all the totals and returns the contact sheet to the counselors. This enables us to have a clearer picture of the number of students being serviced and the number of counseling sessions being held with each student.

An office card was designed which contained pertinent informaton about each student. In addition to name, classification, rank, college, and test scores we feel it important for recruitment purposes to know the referral source. All of this data has potential value for evaluating the center's population.

In determining the procedural changes that would be made an evaluation was made of each phase of the procedure that had been followed. The first phase that evaluated was the testing procedures.

To bring the testing in line with our philosophy of testing we administered the test the second class period instead of the first, omitted post-testing and changed from the Trigg to the Nelson Denny. We feel that thrusting a test upon the students the first class period tends to discourage those most in need of help. We now use the first class period to describe the course and solicit information that will be of use to us in the future. Without an adequate first session explanation of the fact that the test is to be used merely as a guide, those who performed poorly had their poor self-images reinforced. Letting the students know that there will be no post-testing helps instill the idea that they are not in the course just to develop skills to show improvement on a test at the end of the quarter. The improvements they make in rate and comprehension will be evident from the records they keep of the work they do throughout the quarter. Many of the reasons why students enroll in such a course are not even measured on such a test. Therefore, we not only use the test scores for diagnostic purposes but during the first class period we ask the students to indicate on a list of reading and study skills those that are major or minor factors in their reading and study problems. This informal personal survey has proven effective and less time consuming than the Brown Holtzman.

It has also been my experience that many students who have shown marked improvement in their studies as a result of the techniques they learned in the class, fail to show the same degree of improvement on the post-test. This lessens the effects of the improvements they had made which in turn, discourages them from continuing with the course another quarter (which they may do) or pursuing those practices that had begun to help them.

The reasons for changing from the Trigg to the Nelson Denny were several. It can be administered in one fifty minute class period and it is easier and less time consuming to score. Whereas the Trigg only provides norms for college freshmen, the Nelson Denny provides norms for all four classifications of college students.

With all this diagnostic information at hand, the counselor is then ready to prescribe the areas and materials in which the student should begin working. To help the counselor in assigning materials at the beginning of the quarter, each counselor is given what we call a prescription sheet. On this sheet is a list of a variety of materials under such categories as (1) Setting Purposes for Reading, (2) Rate and General Comprehension subdivided into Controlled Reader and Books for Timed and/or

Pacer Reading, and (3) Specific Comprehension Skills. Next to each item is listed a range of percentile ranks. The counselor can then look at the student's total score and immediately find the materials within each grouping which would be the most suitable for that student. The prescriptions are by no means limited to these areas. Student needs dictate additional or alternative recommendations.

The prescription is given to each student individually at a conference held during class time. Prior to giving out the prescriptions all the students are told that the prescriptions are only suggestions and that they may feel free to change whenever they feel the material is unsuitable. We find that they are quite candid about the materials and they sometimes wish to change not because of the ease or difficulty of the material but because they just do not like it. We also explain in advance, to the entire class the areas that will be considered in the prescriptions, the location of the materials, and procedures for utilizing the various types of materials.

Following this initial conference the counselor has a conference with each student every week or two to provide opportunity for ongoing diagnosis. This procedure allows the counselor and student to decide whether to continue with the prescribed work, or make some changes or additions if new needs develop. The need for a student to work on skills in which he is already proficient is eliminated, as is the frustration of students who are not yet ready to move on to another area at a given time but might feel that something is wrong with them if they are not ready when others are.

When we first made the change, we scheduled one study skill lecture with the entire class each week. We have since changed so that once a week we have mini-study skill sessions, meeting only with those students who have indicated a need for and interest in the subject to be discussed. At the beginning of the week the counselor announces to the students the subject to be discussed in the study skill session, the day it will be held, and materials that can be read ahead of time. By having the students read ahead on the topic for discussion the sessions become more of a discussion than a lecture. We have found that the students are more willing to ask questions and participate in the discussions in the informal small group setting. The close contact that is permitted through the conferences and small group discussions is an important factor in keeping those students most deficient in reading skills from dropping the course. We also have tutors who can work individually with those students who need the continual one-to-one relationship as well as immediate help and feedback. This enables the instructor to circulate among the other students to make suggestions and answer questions.

We have found that the two, seventy-five minute sections on Tuesdays and Thursdays do not offer the same consistent practice as do the sessions that meet fifty minutes three times a week. We tried an experiment that has worked unusually well. We explain the benefits of the more frequent sessions to our Tuesday, Thursday people and suggest that if their schedule will permit the rearrangement they should work only fifty minutes on Tuesday,and Thursday and put in an additional fifty minutes some other time during the week. The fact that all the students sign contracts agreeing to work the equivilant of three fifty minute periods a week makes them feel more obligated to keep their word, and they do. Students need not have their reading counselor present to pursue their work, they only need to come to the room, get their folder, select their materials and begin working.

One very significant change we were able to make this year was facilitated by acquiring the use of an adjacent classroom and the services of two more full-time instructors. We increased the class limit to forty and assigned two or three instructors (this includes graduate assistants) to each period. As a result, no one has more than thirteen to twenty students per class, enabling more students to be serviced without overloading any one instructor. The addition of the two instructors is a definite asset since the demands of the college have cut one instructors full-time work in the center to half-time (two courses), and the director responsibilities have reduced his classes in the center to one.

Our program has undergone major changes that have required much work, but we feel that the effort has been worthwhile. But, we have not stopped changing. Even now, further changes are being contemplated. We will continue to make changes which enable us to more effectively help our students.

NAVAJO CULTURE AND READING

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If the subject of Navajo Culture and Reading strikes the reader as being somewhat specialized, I suggest that he look at this discussion as representative of a large and important problem, the problem of a disadvantaged minority attempting to relate itself out of real necessity to the dominant white or Anglo culture. A principal difficulty in this attempt is that of great differences in two languages. The problem, thus, is a double one: it is both bi-cultural and bi-lingual. These two difficulties cannot be separated -- their connections are causal and reciprocal.

I

Before we consider this problem as it specifically affects the Navajo Nation, it may be helpful to comment about what I can only describe as the modernness of the modern Indian. The majority of Americans still seem to think of Indians as they appear in the novels of Cooper and in Longfellow's Hiawatha -- or as Comanches or Apaches attacking those durable wagon trains that we can scarcely escape on television. This is as if we whites were to view ourselves as variants of the Pilgrims or of beaver-trapping frontiersmen. It is absurdly removed from the present realities of Indian life. For the contemporary Indian tends to live much as we do. He drives a car; he spends too much time looking at television; if he can afford it, he installs a bathroom in his adobe or frame house; he serves his stretch in the Army or Navy or Marines (incidentally, he makes a very good soldier); his daughters participate in beauty contests; his sons play football and basketball; he loves country music as performed by Charley

Pride or Merle Haggard; he takes a tape recorder to Indian dances to record songs not in his collection. Most important of all, he has begun to consider the conditions of his life and what he can do to improve those conditions. But he remains very individual, very self-directed. It is very risky to generalize about him; indeed, there is no such entity as "*the* Indian." In short, he is much as other people are -- that is, different from everyone else.

But he has begun to organize. The more mature Indians from many tribes have combined their interests in the National Congress of American Indians. (Notice that our redskins have taken over the annual convention as a presumably inescapable part of American life.) The radical young Indians have staged "fish-ins", have taken over Alcatraz, occupied Wounded Knee, and intermittently carry on demonstrations, much in the style of their radical white peers, in various parts of the country, a movement very well described by Stan Steiner in his *The New Indian*. And nearly all Indians today find common ground in their grievances against the Bureau of Indian Affairs (the BIA) as it now operates from within the Department of Interior. What is now significant, really significant, is the growing cooperation among tribes -- on the national level for nearly all tribes (with the interesting exception of the largest tribe, the Navajos) in the National Congress; and on the local level, for example, among the Pueblos of the Rio Grande Valley.

We may cite certain other trends as nationally significant. One, Indians today are more conscious of their identity as Indians -- and proud of it. They wish to preserve their ancient culture. (And it is just possible that we whites may need the religious and ethical values that are so basic to their culture.) Two, they are absolutely determined to gain control of necessary decision-making in local government, spending of allotted Federal funds, and education; they wish to replace white supervisors and executives by educated members of their own tribes. Three, they are even more determined to get the best possible education for their children. Nothing illustrates the adaptation of the contemporary Indian to the requirements of modern life more than this, for this is a real change in Indian interests, a change that dates from the Second World War and the exposure of thousands of Indians in the service and in wartime jobs to the nature of life outside the reservations. It is impossible to overestimate this contemporary Indian concern with education at every level. It is of course a realistic interest; he knows that better education means a better job and a better standard of living. And he is just like us: he enjoys the best that he can afford. And he would very much like to afford more.

So we find that many tribes have established tribal scholarship funds for the young braves and squaws who want to go to college. We find that Indians persistently agitate for membership on local school boards. We find Indian interests combined in a new organization, the National Indian Educational Association, founded in September, 1970, at the second meeting of the National Indian Education Conference in Minneapolis.[1] We find more and more determination to take the operation of Indian schools away from the traditional management of the BIA and to operate them under the supervision of Indian executives and Indian school boards. We even find the Navajos founding the *first* tribal college, Navajo Community College at Many Farms, Arizona. The stoic Indian of the story-books has begun to speak -- and to speak with much vigor and warmth.

Interested Navajos, for instance, have legally incorporated themselves into the Diñe Biolta Association (Navajo for "The People's Schools Association"); at their 1970 convention characteristic resolutions were passed recommending that at least two Navajo members be included on all reservation school boards, that Navajo evaluation teams evaluate all schools on and off the reservation attended by Navajos, that the Navajo Tribal Council establish a Department of Education within the Tribe's system of government, and that all schools on the reservation be used during the summer months for recreational and cultural programs. It should be added that all such meetings and proposals are regularly given thorough news coverage by the Tribe's weekly newspaper, the NAVAJO TIMES; this meeting was reported in detail on the front page.[2]

The Navajos -- or, as they like to refer to themselves, the Diñe or "People" -- are a truly remarkable race. The majority of them embody many Mongoloid or Asiatic physical traits: they tend to be somewhat short in stature and slender in build; their hands and feet tend to be small and delicately formed; their eyes are sometimes distinctly slanted, making some of them look rather Chinese; their eyes and hair are intensely black. For the most part, they are a very handsome people; their children are probably the most attractive to be found anywhere and many of their old people can only be described as "beautiful". Characteristic of the Navajos is an astonishing vitality that shows concretely in their birth-rate, the highest in the country and three times the national average. There are now perhaps 120,000 Navajos living on and adjacent to the reservation; a current projection based upon the present birthrate forecasts a population of 300,000 by the year 2000. It is plain that the Navajo is not the Vanishing American.

A profound love of children and family life helps to explain this astonishing growth of the Navajo Tribe -- and it is truly astonishing when we recall that at the time of the Tribe's return in 1868 from its forced exile to Fort Sumner in New Mexico, the total population was somewhere between 6,000 and 8,000. Obviously, they are a people of remarkable spirit and also, we must add, of great adaptability. For the Navajos have always taken what they found useful from other peoples: weaving from the Pueblos, silversmithing from the Spanish, television, pickup trucks, and cowboy boots from the Anglos.

Family relations have always been a basic part of Navajo culture -- and this means not the immediate family unit typical of contemporary Anglo culture but a much more extensive group living together in a collection of several buildings, a group that includes three or four generations. This "extended family" is a traditional base for ethical behavior. It is said, for instance, that one of the worst remarks to make about an erring Navajo is "He behaves as if he had no relations". Perhaps the most famous Navajo taboo is that which forbids mother-in-law and son-in-law to meet, since the son-in-law would be blinded by such an encounter. In older times the mother-in-law might even wear a small silver bell to warn the son-in-law of her approach. But such customs, despite their lingering appeal, are now dying out.

Nevertheless, Navajo culture is still extremely rich in many traditions, taboos, and superstitious observances; here it is possible to mention only a few of the most important aspects of a most interesting and very complex cultural inheritance. Certainly, it would not do to omit the hogan, the traditional Navajo dwelling whose origins can be traced back to prehistoric times. This is a six-sided structure of logs, railroad ties, or other materials, often roofed with earth and always having a hole in the center of the roof as a passage for smoke from the fire directly beneath. The hogan is a practical dwelling and is at the same time of religious significance. It figures importantly in Navajo mythology and also in the ceremonials or curing chants of the Navajos. It is involved in the daily religious observances of its inhabitants. It must be blessed before it is lived in and it must be destroyed, usually by fire, if anyone dies within it. Like most of the major artifacts of the Navajo culture, it has many meanings to the People.

The Navajo's fear of disease and of death has much to do with his traditional religion, a belief that has no concern with life after death but is entirely taken up with his life and the things that must be done if life is to be lived in health and happiness. For there is a right way to live, the "Navajo Way", which implies not only the moral behavior sanctioned by family custom but also the right harmony of one's self with its natural surroundings, with all physical being. To be ill is to be in discord with this necessary harmony. To restore it, a medicine man or "singer" is called in by the invalid's family. A Navajo singer is a man who has studied with an older practitioner for many years until he has mastered an immense mass of ritual, often including hundreds of songs and a number of extremely detailed drypaintings (popularly miscalled "sandpaintings"), that makes up one of the traditional healing ceremonials. These rites are so complex that it is impossible for an individual singer to know them all; he must specialize in two or three just as Anglo doctors often become specialists. Not only is the singer's fee expensive but other costs make the price of a "sing" very high, often a thousand dollars or more. For a ceremonial is a social occasion as well as a healing rite; all Navajos are welcome and all must be fed, sometimes for as many as nine days. It is plain that all this expense and concern are psychologically helpful to the patient; we recognize in these ancient rites the elements of psychosomatic medicine. Like Anglo or any other medical treatments, the singer's ministrations are not always successful; what is surprising is the number of successful treatments, some of them bringing about complete cures after the efforts of white doctors and hospitals have failed.

Already some of the ceremonials have been lost; others continue to be practiced. And this state of partial loss is true of the whole traditional culture; many customs are falling into disuse as the Navajo takes on more and more of the ways of the white man. What is especially interesting at present is the degree of change among the reservation Navajos; the old and the new currently overlap in many fascinating ways. Grandfather still wears the oldfashioned tall black hat and earrings of the palest blue turquoise; grandson goes to a dance on Saturday night where he does the latest steps in his cowboy hat and boots. The family may live in a cluster of dwellings that includes a hogan, a small frame house, and a new trailer. It is a social order in transition in every sort of way.

II

I have attempted to indicate in some detail something of the nature of Navajo culture, for it is much involved with Navajo education. The Navajos wish to "move with the times" but to preserve their culture also -- for they are very proud of it, as well they might be. For many years, all Navajo schools on the reservation were operated by the BIA. Because of the lack of good roads and the severe winter weather, many schools had to be boarding schools where the children would live throughout the school year. Graduates of these schools were frequently described as fitting into neither Anglo or Navajo life, insufficiently adapted to the one and spoiled for the other. A principal objective of Navajo education today is a graduate who will be at home in both cultures, which means that he must have a good command of both languages. Let us look briefly at three schools of great interest in this regard: the Navajo Community College at Isaile, Arizona, the new high school at Ramah, New Mexico (a small reservation south of Gallup), and the Demonstration School at Rough Rock.

The Navajo Community College is the first college to be founded and operated by a tribe of American Indians. It has begun modestly as a two-year junior college that is chiefly oriented toward vocational training. What is unique about it is that in addition to its very sensible vocational bias, it emphases Navajo culture as well as Anglo culture; an entire program of courses is offered in the Navajo language and in Navajo arts and crafts. The admissions policy is also interesting: anyone may enroll, even Anglos; and previous academic training is not required. This most remarkable enterprise has aroused interest and support from every quarter; a recent and notable instance, as reported in the NAVAJO TIMES, October 15, 1970, is an offer of aid from the American Association of Junior Colleges. The executive director of this organization, Dr. Edmund J. Gleaser, is quoted as saying:

> It is vital to the national interest that this college, now starting into its second full academic year, not only survive but flourish.
>
> It serves the most economically disadvantaged non-white community in this country -- annual family income on the

> Navajo Reservation averages only about $800 -- and the college can become the bulwark for both educational and economic progress as well as for the renewal of the Navajo culture.[3]

The new high school at Ramah, New Mexico, is a current and excellent instance of local community action; -- it is the first secondary school to be controlled by Navajos. Rather than continue to send their students out of the community, local leaders have constituted a school board that has secured funds from the BIA along with the consent of the latter for them to renovate and operate the school in their own way. The board has secured the services of a doctoral candidate in education at the University of New Mexico to draw up a curriculum relevant to local needs. His basic instruction is very Indian indeed: to plan a course of study that will help students to understand the meaning of life as it is actually lived by Indians in the Ramah area. Perhaps there is a suggestion here for us all.

The third school may justly be described as the best-known and most interesting experiment in Indian education today. This is the Demonstration School at Rough Rock, Arizona, in the heart of the Navajo Reservation. It is the mission of this school, organized with the consent of the BIA and with the aid of Federal funds, to "demonstrate" what can be done at the elementary level by means of Indian ideas and Indian control. Fundamental to the school is its bi-cultural, bi-lingual objective, to produce graduates who will know how to live as both good Navajos and good Anglos. The emphasis upon reading and writing of both languages is consequently very great. As an aid to his training in two languages, a Curriculum Center has been established in connection with the school. This center is now producing bi-lingual textbooks for early training in reading as well as texts concerned with Navajo history and culture. Heretofore, one of the greatest needs in Indian education has been for textbooks oriented to the experiences of Indian children; text materials concerned with suburban middle-class Anglo life have little meaning for such children.

Here a few notes about the Navajo language must be added. It is a very difficult language that includes a number of sounds not used in English at all. As in Mandarin, meanings of words often vary according to the tones of vowels; in Navajo low, high, rising, and falling tones are differentiated. And these and other phonetic differences cannot be bypassed in Navajo as they can, for example, in Sioux and other tongues. Furthermore, unlike English, which concentrates on nouns, Navajo grammar is chiefly a matter of verbs -- and the forms of verbs are capable of many choices in meaning. In making these choices Navajos tend to be imprecise about time sequences, again quite unlike the Anglos, but are very finicky about matters of agency. To quote one authority, "The important point is that striking divergences in manner of thinking are crystalized in and perpetuated by the forms of Navajo grammar."[4]

Thus, the language problem is also cultural; it is not only a matter of speaking differently, but of thinking differently -- and the very nature of Navajo language requires and supports this. We need also to note that Navajo has not been a written language until recently; very few Navajos of any age can at present read their own language.

An attempt to meet this problem of the two languages is being made at the Rough Rock School through early instruction in Navajo, both written and spoken, and subsequent instruction in English as a Second Language. Indeed, the success with TESL -- Teaching English as a Second Language-- here and at other reservation schools during the 1960's has been so great that it is now viewed as the chief hope of success with the Navajo-English language problem. At Rough Rock and elsewhere, however, a major obstacle has been and remains an insufficient supply of Navajo teachers and teacher-aides; more of these necessary instructors are now being trained through special courses and through in-service training.[5]

Use of TESL materials -- that is, materials based upon research in linguistics focused upon sentence patterns and contrasts of such patterns -- began at Shiprock Boarding School in 1959. Early success with this approach led to its further use at the school at Rock Point and at the Chuska Boarding School. Continued success led to the implementation of TESL in all the reservation boarding schools by 1968 and to an elaborate program for the instruction of teachers in the late 1960's. TESL materials have been especially developed for elementary-grade-level Navajo children by Dr. Robert D. Wilson of UCLA and more recently materials have been devised for the use of kindergarten pupils. Six pilot bi-lingual and bi-cultural classes in kindergarten were formed for 1970, these classes being instructed to begin with the study of Navajo. The development of innovative materials for these and other classes and the holding of workshops for the training of teachers and teacher-aids in such materials is continuing at many schools on the reservation.[6]

Bi-lingual and bi-cultural aspects are, of course, the difficulties peculiar to the teaching of reading to young Navajo children. If we except these difficulties there remain the usual problems of reading readiness, personal motivation, perceptual abilities, and all the other problems that plague the teachers of white children. By any of the usual standards of such teachers the current reading program at the largest off-reservation boarding school is outstanding. This is Intermountain Boarding School at Brigham City, Utah; a school with an all-Navajo enrollment of over 1,600 students. The program at Intermountain is an individualized, self-instructive, developmental program with no limitations on progress. As described in the NAVAJO TIMES:

> When entering the program, a student is tested to determine his reading level, then placed with a team of four or five other students of his choice and level. His team centers on one activity for a week. At the end of the week his progress is charted and the following Monday he is introduced to a new activity until he rotates through the complete program. The first term he rotates through seven separate activities and the second term he will rotate through eight activities. He is in the program for one semester, then he moves to the Language Laboratory for oral enrichment of the English language.
>
> An attempt is made to alternate the activities so that the student works with machines one week, then off machines the following. The areas stress vocabulary development, speed, comprehension, various work-study skills, cognitive skills, word attack skills and reading for fun. Machines manipulated by the students are language masters, controlled readers, the Aud-X, tape recorders, a filmstrip projector and an overhead projector.[7]

Another new reading program is soon to be added at Intermountain School, a program that will bridge the gap between the work in Remedial Reading and the Developmental Program described above.

Innovative programs seem to be the rule at this school. Dr. John B. Geissinger, superintendent of schools at Tenafly, N.J. and president-elect of the American Association of School Administrators, made the following remarks after a visit to Intermountain:

> They are working on individual problems at Intermountain. The program is geared to each individual student so that a class of 30 students could conceivably have 30 different activities going on at the same time. They are teaching the student according to his needs.
>
> I also found a degree of community involvement which, I understand, is very new to Indian education.[8]

The latter aspect is only one of several currently notable developments in Indian education, not only in Navajoland, but all over the country. Let us attempt a brief list of these. First, involvement at the local or community level through membership on school boards and in other policy-making connections; second, determination to renew and continue tribal culture through education -- which means that learning activities must be bi-lingual and bi-cultural; third, in consequence, the preparation of appropriate curricular materials; fourth, an effort to secure the most and the best education possible as a principal means of economic and social survival -- which means that more Indians must not only start university study but finish it and go on to graduate study in order to fill a great need for Indian teachers, lawyers, engineers, and other professional workers.

FOOTNOTES

1. Navajo Times. Sept. 17, 1970, p.2.

2. Navajo Times. April 9, 1970, p. 2.

3. Navajo Times. October 15, 1970, p. 20.

4. Kluckhohn, Clyde and Leighton, Dorthea, The Navajo.

5. For more information, see various issues of Journal of American Indian Education, published by Arizona State University.

6. Personal Communication. William J. Benham, formerly BIA Assistant Director of Education for the Navajo area.

7. Navajo Times, Jan. 1, 1970.

8. Navajo Times, October, 1970, p. 13.

THE PURDUE DEVELOPMENTAL READING PROGRAM -- PROGRESS AND PROBLEMS

Bernard Schmidt
Purdue University

The basic Purdue Developmental Reading course, English 185, is meant to help students increase their reading efficiency. It is elective, has no prerequisites, and is neither a speed nor a remedial course. Its principal objectives are to

1. Improve physical skills -- widen span, improve rhythm, and reduce regressions.
2. Teach flexibility -- adapting speed to purpose.
3. Show that there are a variety of "comprehensions" in reading matter.
4. Develop judgment, critical analysis, understanding, decision-making, and improvement of taste.
5. Increase vocabulary.
6. Show that increased reading efficiency is useful in almost all aspects of living.
7. Help develop a liking for reading, and thus expand the student's horizons.
8. Help make reading a profitable pleasure.
9. Develop the student's confidence.

Classes meet two hours a week for fifteen weeks. Some 75% of the students elect to meet an extra six hours a semester. Credit is one semester hour. Basic materials are films, film strips, essays, pacers, novels, mini-lectures, and student discussions, especially of their own critical evaluations of some of the material read. Testing is done on rate and comprehension at the beginning, middle, and end of the semester. Both standardized and departmental-made tests are used. Over the years, some 50,000 students have taken the course, with an average gain of 9% in comprehension and 110% gain in rate.

Since gain in rate is easy to come by -- is, in fact, almost inevitable -- emphasis is placed on specific skills, vocabulary, flexibility, and especially on critical reading. Thoreau's thesis that it "takes two to read a book" is emphasized. Writer and reader are inseparable. What does the writer say? How does he say it? Do I agree or disagree? Why? Such questions are emphasized. We try to get the students involved in reading.

The course has been the basis of staff research in such matters as influence of course on grade-point index; usefulness of mechanical aids; change in eye-movement patterns; retention of reading improvement; relationship of rate and comprehension; critical reading; relationship of intelligence and reading improvement; vocabulary improvement; and student attitudes toward reading.

Some of the problems we have faced over the years are

1. At what segment of the student body should the course be aimed?

2. How should grades be determined?

3. Does the course deserve credit?

4. How much individual attention should be given to poor students?

5. How can instructors be trained most effectively?

6. How much should we deemphasize speed of reading?

None of these problems seem to have a "right" or "wrong" solution: indeed, we are not sure there are any "solutions" at all.

It was decided early that the course would be aimed at anyone who wished to improve his reading efficiency. We have steadfastly refused to make the course required for students in this or that lowest percentile on placement tests. We did not want the course to carry the twin stigmas of "remedial" or "required". Still, we realize that many poor students do not take the course on their own volition.

Grading is another dilemma. It is made clear to each student that he is competing against himself, not the class, that his progress is not measured against anyone else's. His grade is decided by attendance, attitude, effort, and progress on tests. And so it is inevitable that there are students who are better in rate and comprehension at the beginning of the term than others are at the end. But all these students under our criteria may get the same grade. Is it fair?

On the granting of credit we feel more secure. We believe that "if a course is worth taking, it is worth some credit." Students, of course, agree. But there is a segment of the faculty at most -- perhaps all -- colleges and universities who are suspicious of "reading" courses.

They assume college students "know how to read." They seem unaware that reading efficiency can be improved; that there is no "perfect" reader. To satisfy these people, we have put substance into our course and have tried to explain what reading efficiency means.

Giving sufficient individual attention to the poor students in a large class (25-30 students) is not always easy. But if course material is flexible, if every student can at least part of the time move at his own pace, and if instructors are skillful and patient, then the least efficient students can gain much, and need not feel they are lost. We want to help them, but not at the exclusion of helping other students too.

A look at programs for reading conferences will show that instructor training is not a problem exclusive to our courses in reading -- it bothers a lot of schools. Since our courses are in the Department of English, most of our instructors are graduate assistants working on advanced degrees in English. Few have had previous reading training, and may not feel so at home as they might teaching composition. During the summer before they report, we send them a basic package of material about reading and reading instruction. (It is the same package we send to many high schools and colleges that ask about starting reading programs.)

A week before classes begin, our new instructors report for indoctrination sessions; these are conducted by both faculty supervisors of the program and by graduate instructors who have already taught our courses.

New instructors are assigned to experienced ones for advice and counsel, and for help during the first teaching sessions. In addition, meetings of instructors are held periodically during the term, and faculty members visit classes. Innovation within the basic structure of the course is encouraged. Teaching materials created by instructors are kept in a central file for universal use.

We constantly seek new ways to make our instructors more skillful and more sure of themselves.

A last problem we encounter often is the student notion that "reading is speed." Much of this notion comes from extravagant claims about high-speed reading courses. Student naivete accounts for the rest. To combat this, our instructors emphasize that rate without comprehension is not reading at all, and that there is no such thing as a student's "reading speed." He has many speeds, depending on what he is reading, and why. Consequently, he is told that flexibility, or knowing when to shift gears, is one of the most important characteristics of the efficient reader. We realize that increase in rate is a delight and a morale builder to the student, but try to get him to understand its proper place in reading proficiency. With this problem, as with most of the other problems in the very subjective matter of reading improvement, we both succeed and fail.

A COMMUNITY COLLEGE READING PROGRAM

George A. Simmons
Lorain County Community College

Community College reading programs are as varied as the institutions of which they are a part. Some are strictly tutorial programs, others are modeled after the usual college English courses. Some require enrollment while others are strictly on a voluntary basis. Some are independent departments while others are part of counseling or English. And some grant academic credit while others do not. I would like to limit my presentation to one particular program--that at Lorain County Community College.

First, I want to put reading at LCCC in proper perspective by saying that we do not have a reading program per se at LCCC. Instead, reading is one part, although an extremely important part, of our total Developmental Education program.

Like most community colleges, we have an open door admissions policy. Any student who is a high school graduate, or in certain situations even those who have not graduated from high school, can enroll at the college. Consequently, as you might guess, substantial numbers of students enter our open doors who are something less than prepared to handle the rigorous demands of academic pursuits. Specifically, many students are lacking necessary skills in mathematics, reading, writing and study techniques.

If these students are to find our beckoning open doors to be anything other than revolving doors through which they enter, spend a few frustrating quarters and then leave disillusioned and disgruntled, we must provide the support services needed to help them move into the academic world. The purpose of our Developmental Education program at LCCC, like other community colleges, then is to provide the help needed in order for our students to achieve academic success.

In terms of organizational structure, Developmental Education is organized as a separate department under the Student Services area of the college. The director of Developmental Education is under the direction of the Dean of Student Services. Other parallel areas of Student Services at LCCC includes Admissions and Records, Financial Aid and Placement, and Counseling and Testing. While Developmental Education works closely with these areas, as well as with the academic divisions, it is an independent area with its own separate staff, facilities and budget.

Our Developmental Education staff for this fall quarter 1973-74 consists of a total of three full-time professional staff members, nine part-time instructors, one full-time secretary and two student aids making a total staff of 15.

There are three types of assistance provided students through our Developmental Education program. First, we offer a series of 10 formal D.E. courses including 3 math courses, 3 reading courses, 2 English courses, one study skills course and a group counseling course. The second part of our program is a tutorial lab in which we provide free tutoring in accounting, chemistry, composition and grammar, mathematics, reading and study skills and shorthand. The shorthand tutoring was added only recently at the request of the business division. And the third and newest part of our program is a series of mini courses providing intensive short-term group instruction dealing with selected topics from chemistry, composition and grammar, mathematics and reading and study skills. In addition to the above, we occasionally provide additional services including summer learning skills seminars and off-campus workshops.

Now let me briefly give you more information about each of the three aspects of our total program just mentioned.

First, let's consider the formal Developmental Education courses in math, English, and reading and study skills. These D.E. courses are similar in many ways to the regular college courses. The student registers for and pays fees for these courses on the same basis as for any other college course. He attends regularly scheduled classes and at the end of the quarter is awarded a grade that is entered on his college transcript. However, Developmental Education courses do not count toward graduation requirements and grades from these courses are not included in computing the student's cumulative grade point average. Enrollment in D.E. courses is open to anyone. However, enrollment is not required, although some students are strongly urged by their college counselors or advisors to enroll in needed courses.

The Counseling Office does attempt to identify those incoming students who should be advised to enroll in D.E. courses. Those students ranking in the lower half of their high school graduating class and/or having a composite score of 16 or lower on the ACT (American College Test) are asked to complete a battery of placement tests in math, reading and English. Tests used include the Cooperative Arithmetic Test or the Lankton Algebra Test - depending upon planned curriculum, the Nelson Denny Reading Test and the Missouri College English Test. Students falling below designated cut-off points on these tests are then advised to enroll in specific Developmental Education courses.

Thirty-five to forty percent of our incoming students have ACT composite scores below 16 and thus are asked to complete the series of placement tests just cited. Of those students who take the placement tests, generally about 90% of them, according to placement test scores, need one or more Developmental Education courses. Of those students needing one or more courses, roughly one-third need only one course, about one-third need two courses, and the remaining third need three courses.

To cite a specific example, during the summer of 1971 and prior to beginning of the fall quarter in September, our LCCC Counseling Office administered the placement test battery to 481 students. Of these 481 students, a total of 409, or 85%, needed one or more D.E. courses. And of the 409 students needing one or more D.E. courses:

131 students, or 32%, needed 1 course
149 students, or 37%, needed 2 courses
129 students, or 31%, needed 3 courses

I wish that I could report to you that most of the students identified as needing a particular D.E. course followed through and enrolled for the needed work. Unfortunately, that was not the case. Only 52% of those students needing one or more D.E. courses actually enrolled for any D.E. course.

Table 1 presents a summary of numbers of students identified by testing as needing specific D.E. courses and data concerning numbers of identified students who enrolled in needed courses. As indicated in Table 1, in all courses except D.E. 070 - our remedial reading course, well under half of those students needing a particular course actually enrolled in the needed course.

TABLE 1

LORAIN COUNTY COMMUNITY COLLEGE
DEVELOPMENTAL EDUCATION

Summary of Pre-Enrollment Placement Testing
and Developmental Education Course Enrollment
1971-72

		D.E. 050	D.E. 054	D.E. 055	D.E. 070	D.E. 071	D.E. 074	D.E. 080	D.E. 081	D.E. 090
Number of students identified as potential enrollees		52	192	---	155	146	---	128	45	---
% of students tested identified as potential enrollees		11	40	---	32	30	---	27	9	---
Number of identified students who enrolled in course indicated		19	39	---	104	22	---	59	7	---
% of identified students who enrolled in course		37	20	---	67	15	---	46	16	---
Number of identified students who did not enroll in course		33	153	---	51	124	---	69	38	---
% of identified students who did not enroll in course		63	80	---	33	85	---	54	84	---
Total enrollment of course for 1971-72		48	201	16	148	80	109	125	53	9
Number of enrolled students who were identified by testing		19	39	0	104	22	0	59	7	0
% of enrolled students who were identified by testing		40	19	0	70	28	0	47	13	0
Number of enrolled students not identified by testing		29	162	16	44	58	109	66	46	9
% of enrolled students not identified by testing		60	81	100	30	72	100	53	87	100

At this point, I would like to emphasize that enrollment in D.E. courses is not limited to only those students identified through testing as needing a particular course. Instead, enrollment in all D.E. courses is open to anyone. In fact, as shown in Table 1, in all courses, well over half of the students come in without being identified through testing - some at the advice of faculty members and counselor, but also a substantial number of them enroll simply because they feel that they need the course.

As you recall, I mentioned earlier that there are three distinctly different types of assistance to students provided through our Developmental Education programs. I would like to leave the formal courses now and move along to the second part of our Developmental Education program - our tutorial laboratory.

As a part of our Developmental Education program at Lorain County Community College, we operate a tutorial laboratory which provides tutorial help in accounting, chemistry, English composition and grammar, math, reading and study skills, and shorthand. Tutorial services are available to any registered student at the college and are provided free. To get tutorial help, the student simply comes to the tutorial lab and asks to see a tutor. Help is given on a first-come, first-served basis - if the tutor has no one already scheduled, a student can get help on his first visit, or if the tutor is already helping someone else, the student is given an appointment for the earliest time that he can come back. Some students are referred by their college instructors; however, we have found that the majority of the students come on a completely voluntary basis. Table 2 presents statistical data concerning utilization of our tutorial services for the 1972-73 academic year. As these figures indicate, a very substantial number of students do use this service.

TABLE 2

SUMMARY OF STUDENT USE OF
TUTORIAL SERVICES FOR THE
1972-73 FISCAL YEAR

	Fall Quarter			Winter Quarter			* Spring Quarter			Total For Year		
	Number of students served	Total Tutorial sessions	Avg. no. sessions per student	Number of students served	Total Tutorial sessions	Avg. no. sessions per student	Number of students served	Total Tutorial sessions	Avg. no. sessions per student	Number of students served	Total Tutorial sessions	Avg. no. sessions per student
Accounting	39	232	5.95	33	234	7.09	29	200	6.89	101	666	6.59
Chemistry	31	96	3.10	20	78	3.90	22	49	2.22	73	223	3.05
Composition and Grammar	36	123	3.42	33	88	2.67	35	85	2.43	104	296	2.85
Mathematics	124	387	3.12	97	374	3.79	104	442	4.25	325	1203	3.70
Reading and Study Skills	86	273	3.17	37	170	4.59	32	115	3.59	155	558	3.60
										758	2946	3.89

* All Spring Quarter figures prorated on basis of utilization through 5/18/73

All of our tutors have extensive training in the subject area in which they tutor. Most of them have at least a Masters degree in the subject area in which they are tutoring. They all have at least the Bachelor's degree. And they all also teach formal courses at the college, either in the Developmental Education department or on a part-time basis in one of the academic divisions. The part-time tutors are paid on the basis of clock hours worked while the full-time Developmental Education faculty have tutorial duties scheduled as part of their teaching loads.

The third aspect of Developmental Education that I want to discuss is what we call Mini Courses.

Mini Courses are designed to meet the needs of LCCC students enrolled in college credit courses but needing additional help in order to be successful in these courses. Each mini course is designed to provide intensive review and instruction, in a group setting, dealing with a specific topic in which students are deficient. Mini courses are scheduled at the request of instructors of college courses from which students will come; or for certain general topics, such as those in the study skills area, when the Director of Developmental Education deems it appropriate. Like the tutorial service, Mini Courses are free and are open to any registered Lorain County Community College student.

Let me give you an example so that you can get a better picture of the way our Mini Courses work. Last year, the instructor of one of our nursing classes discovered that many of her students were having trouble studying their textbook. They could read the words - but had trouble getting and retaining the ideas which the words represented. She called me, I scheduled a classroom for an hour convenient for her students and gave them a two session demonstration and discussion of an effective procedure for studying their nursing text. The instructor of a surveying course discovered that 16 of his students were unable to use right angle trigonometry, an essential skill in his surveying class. I talked with his students to determine when they had free time, arranged to have a D.E. math instructor talk with the surveying instructor to determine more precisely the exact skills the boys needed, and scheduled a mini course which currently meets twice each week to give these surveying students the help they need.

Mini Courses were first introduced in the spring of 1971 and were slow to catch on. But, their use has been steadily increasing since then.

Last year we ran Mini Courses covering 27 different topics and enrolling 483 students. Figure 1 shows specific titles of Mini Courses and enrollment in each for 1972-73.

Now that you have some understanding of how our total Developmental Education program operates, I want to devote the remainder of my presentation to a discussion of the reading portion of the program.

We include reading instruction in all three aspects of our Developmental Education program - D.E. courses, tutoring and mini courses. However, the bulk of our reading instruction is provided in the formal D.E. courses, while tutoring and mini courses lean more heavily toward the study skills related to reading. Therefore, most of my remaining discussion will center around our formal D.E. reading courses.

We have three formal D.E. reading courses designated:

D.E. 070 - Fundamentals of Effective Reading
a 5 hour course

FIGURE I

MINI COURSE UTILIZATION
1972-73 FISCAL YEAR

SUBJECT	MINI COURSE TOPIC	DURATION (NO. HRS.)	TIMES OFFERED DURING YEAR	TOTAL ENROLLMENT
Chemistry	Chemical Bonding	2	2	22
	Chemical Equilibrium	2	1	17
	Chemical Kinetics	2	1	12
	Colligative Properties of Solutions	2	1 1	6
	Electro Chemistry	2	1	5
	Expressing Solution Concentration	2	1	6
	Gas Laws	2	1	3
	General Review	1	3	24
	Oxidation Reduction	2	2	29
	Periodic Table of Elements	1		1
	Preparation of Solutions	1	1	4
	Quantum Numbers	1	2	35
	Thermodynamics	2	3	18
Composition and Grammar	Pronouns - Use and Function	3	1	20
Mathematics	Algebraic Fractions	2	2	23
	Equations - Simple Ratio & Proportion	2	2	10
	Metric System	2	1	15
	Radicals	6	1	13
	Simple Fractions	2	1	2
	Slide Rule	8	4	24
Study Skills	Spelling Improvement	6	1	3
	Taking Lecture Notes	1	1	4
	Taking Tests and Examinations	1	4	53
	Tips for Textbook Study	2	7	68
	Use of the College Library	2	1	25
	Effective Listening	2	2	14
Other	How to Get a Job	2	3	25
			Total Enrollment - All Mini Courses	483

D.E. 073 - College Reading Skills
a 3 hour course
D.E. 074 - Speed Reading
a 3 hour course

As mentioned earlier, students enroll in these courses, pay their fees and attend regularly scheduled classes just as they would for any other college course. However, these courses are non-credit and thus, do not count toward graduation requirements.

The Speed Reading course, while very popular, is the one least needed by our students. Therefore, I would like to ignore Speed Reading from this point on and confine my remarks instead to our other two reading courses - 070 Fundamentals of Effective Reading and 073 College Reading Skills.

First, let's consider the 070 course which is our most basic, or remedial reading course. This course is for students having rather severe reading problems. Those students ranking below the 24th percentile on the Nelson Denny Reading Test total score are advised to enroll in 070. Available data shows that a very substantial number of our students, usually more than 30% of those taking the placement tests, fall below this 24th %ile cut-off point.

Content of the 070 course can best be described as individualized group instruction. During the first week of the quarter, we administer a series of semi-diagnostic group tests which give us a starting point for selecting instructional materials and starting levels. Test instruments used include the California Reading Test - Advanced form X, the Westinghouse Relevance of Words Diagnostic Survey and an adaptation of the SRA Reading for Understanding Placement Guide. Using results from these tests as a guide, instructional materials are then assigned.

Rather than a completely individualized setting then, whereby students work on whatever interests them on a particular day, a fairly rigid schedule is followed. For example, on Mondays, we usually work on the required te t FREE TO READ by Bamman, Hyama and Prescott which is used to provide some continuity and a brief review of skills for the entire class. Tuesdays usually are devoted to work in spelling, vocabulary or word analysis with students working in groups established on the basis of test scores in combination with student interests. Wednesdays are usually devoted to a whole class activity such as critical reading or perhaps lecture demonstrations on selected study skills topics, such as studying college textbooks or preparation for and taking tests and examinations. Thursdays are usually devoted to individual work with selected comprehension, vocabulary or rate materials. And Fridays are usually reserved for work with Power Builder materials from one of the SRA Reading Labs, with the exact levelbeing established at first on the basis of test scores and subsequently termined by individual performances. Also, beginning sometime during the second half of the quarter, rate and comprehension work with the Controlled Reader Jr's is done on Thursdays or Fridays.

The last week of the quarter is devoted to evaluation which includes alternate versions of the California Reading Test and the RFU Placement Guide given at the beginning of the quarter, and also, a final examination covering content of lectures and skills covered in the textbook. A student evaluation of his own progress and of the course is also included.

Now I would like to turn your attention to D.E. 073 - College Reading Skills. This three hour course is intended as a developmental course for those students somewhat deficient in reading but not seriously so. D.E. 073 is recommended for those students who rank between the 24th and 46th %ile for total reading on the Nelson Denny Reading Test. Like the 070 course just discussed, the first few class sessions in the College Reading Skills course are devoted to testing. Tests used include the MHBSS Reading Test by Dr. Raygor and the MHBSS Vocabulary Test, also by Dr. Raygor, and an adaptation of the SRA-RFU Placement Guide. Alternate forms of these tests are also administered as post-tests at the end of the quarter.

Instructional activities in the 073 College Reading Skills course are individualized to some extent, but much less so than is true in the more remedial 070 course. Primary emphasis of the 073 course is on improvement of vocabulary, comprehension rate and flexibility. Heavy emphasis is also given to techniques for studying college textbooks. Instructional materials and equipment include the SRA Reading for Understanding Lab, the EDL Controlled Reader Jrs. and several components from the McGraw-Hill Basic Skills System, Reading for Significant Facts by Raygor, Reading for the Main Idea by Raygor and Basic Vocabulary Skills by Nancy Davis. We also use the EDL Skimming and Scanning materials.

And now, the ultimate question is, "Is our reading program effective?" Yes, we think it is. Student evaluations of their own progress and of the course are very positive. Comparison of pre- and post-test scores reveal outstanding gains for many individual students, and modest but consistent gains when class mean scores are compared. Unfortunately, the gains of class mean scores are not great enough to appear to be significant - no statistical tests for significance have been performed as yet. And finally we are currently conducting a follow-up study, the preliminary results of which appear to indicate that successful completion of our reading courses, and other D.E. courses, result in a lower rate of attrition during the first year in college.

READING TO PERCEIVE ORGANIZATION A NEGLECTED COMPREHENSION SKILL

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INTRODUCTION

Reading teachers universally agree that a person cannot be said to be reading unless he is also comprehending. Stated as a principle, comprehension of the printed word is a primary objective and the ultimate purpose of reading instruction. Therefore, the improvement of comprehension skills is the real substance of any reading improvement program. It is not at all surprising then that much research effort has been directed at clarifying the notion of comprehension and the processes it involves.

In the practical sphere, it is not absolutely necessary to understand the entire nature of comprehension or to be able to identify all the factors involved in the process to devise more effective comprehension building programs. Reading teachers should concentrate on exploring creative and innovative teaching techniques, materials, and approaches which can prove useful in improving comprehension skills. Man has been quite effective in developing the electronic age while remaining essentially ignorant of the ultimate nature of magnetism.

WHAT IS COMPREHENSION?

The scientific study of comprehension is immensely complicated by the fact that grasping meaning from the printed page is dependent upon an individual's reactions to the totality of his past life experiences. Comprehension must be viewed as an organismic or even as a "personality" reaction. The meaning derived in the process of comprehension is unique to each individual because his personal life experiences, past reading experiences, and physiological responsiveness to these experiences are all unique.

Most will agree that reading can neither be adequately explained nor effectively taught as a kind of building process in which the reader combines a series of meaningful symbols to arrive at what is essentially an additive or reorganized form of known elements. Comprehension is not really explained by analyzing in isolated component parts anymore than one can explain a kaleidoscope by studying the pieces which make it up. Yet an additive perceptual process somehow does seem to form the physical basis for comprehension.

One who reflects on the problem further is impressed with the essential role that organizational patterns play in the communication of thought quite apart from the elements which are organized. Whatever process accounts for the phenomena of thought, when it is communicated effectively it is organized according to definite linguistic rules or patterns. It is remarkable, therefore, that more attention has not been given these patterns of organization by teachers in their efforts to improve comprehension skills.

Evidence of the importance of organizational patterns is commonplace. Consider the words--ran and may. As mere random words these terms do not communicate. Yet, any random noun and verb will communicate if they are placed in the proper sequence. "May ran." Now the same words constitute a complete thought, but only because of the semantic relationships implied in their sequential organization, not because the elements themselves are any different. This phenomena associated with comprehension skills appears to have been largely neglected both by the authors of manuals for the improvement of comprehension skills and by the reading teachers themselves, not because it is difficult to appreciate, but because it is an assumed skill. This assumption must be justified. Experience has shown that many students do not really understand this sort of language pattern well.

It would seem useful, therefore, to develop a carefully planned attack on this facet of reading comprehension--the skills required to recognize the organizational method employed by writers to convey their meaning. Until the reader is capable of organizing the information represented by the symbols, the teacher cannot effectively clarify the specific element which is blocking comprehension.

The teacher must realize that the student may not comprehend because of deficiencies in either one or both of two different but concurrent thought processes. The reader may know the ideas (vocabulary), but not grasp the organization of the communication, or he may be able to grasp the organization of the communication (organizational sequence) but lack an understanding of the meaning of the specific component parts of the sequence. He may react to "ran" and "may" as random words and not understand, or he may react to "May ran" without knowing what one of the words means, and not understand; or it is possible that both of these may be operating simultaneously to block communication. In any of these cases, the student will not comprehend the meaning of the writer.

Efforts to supply suitable training materials for the improvement of comprehension skills should provide training in the various techniques used by writers to communicate. Secondary reading teachers, especially, need instructional materials which are designed primarily to help the student develop a better knowledge of how ideas are oganized for purposes of communication because writing at this level is regularly more complex. Not only will such materials serve as a direct aid to improving reading comprehension, but they will enable the teacher to focus more directly on the specific elemental factors (vocabulary) which may be blocking effective communication. An effective comprehension training program, in short, must be one which is developed on the premise that the student needs to understand both how communication is taking place and what is being communicated before he can be said to really understand or comprehend. This is especially true at levels which require the student to learn independently through reading.

Observing students in their attempts to master their reading assignments, it has become apparent that the sorts of skills needed to do an efficient job of reading for meaning are very much the same as those used in making an effective outline and summary statement; therefore, the kind of comprehension skills which these students need to be using should be developed around outlining and precis writing techniques. In this way, the student learns both to recognize organization and express his understanding. This seems to require four major skills:

1. The ability to recognize what the author is saying and express this meaning in the fewest possible words.

2. The ability to recognize how the sequence of main ideas of a selection are related to one another so that the larger organizational pattern of the writer can be used as an aid to understanding and memory.

3. The ability to organize details under their proper topics so that they can be clearly understood and effectively integrated through the creation of strong association patterns.

4. The ability to write an effective summary statement or precis of the entire selection to insure understanding and provide an opportunity for application and future review.

A very serious deficiency in the student's comprehension skills lies in his passivity. In a very real sense, the only way to teach comprehension is through guiding the processes of understanding; therefore, the exercises designed to improve active participation on the part of the reader in the thought processes of the writer must themselves be prepared in such a way that the student actively participates in their development. This result is probably best achieved by programming the exercises in question. The most effective program developed to teach these skills should force the student to focus his attention on the basic rhetorical devices used by writers to explain, clarify, and otherwise develop their ideas. It must progressively guide the student to discover for himself how meaning is conveyed by the sentence and how transformations and transpositions in word order and function are used to give emphasis to particular ideas. When he has a thorough grasp of how sequence gives rise to meaning, he must learn how skeletal units are qualified to produce specific shades of meaning by the addition of modifiers and come to appreciate how groups of words, clauses, or phrases can be employed as substitutes for these modifiers.

These basic organizational facts may appear obvious--so obvious that most teachers are likely to overlook them as primary processes involved in reading comprehension. However, unless they are thoroughly understood, the student is not ready to be taught how sentences are combined according to this same basic pattern to develop paragraphs. The basic communication of the sentence is "Who did (or is) what," the basic communication of the paragraph is the same. The agent or doer is the subject of the sentence; its counterpart in the paragraph is the topic sentence. Just as the elements of the sentence can be further clarified by modification, the topic sentence of a paragraph is clarified by developmental sentences. Paragraph ideas are developed through the techniques of definition, repetition, illustration, and justification. It is at this point that the student must begin attacking the basic comprehension problem he faces in reading his text.

Once he is able to identify the essential elements of the communication, he can be taught to reduce the paragraph to manageable size for retention purposes. He must understand that this "thought reduction" process is the contribution he, the reader, makes toward comprehending what he reads. If he eliminates too much or confuses the content of this reduced statement, he fails to comprehend accurately.

I have remarked earlier that we often meet students who are able to comprehend individual paragraphs in this sense, yet fail to grasp the meaning of larger units of writing. Beyond the ability to comprehend paragraphs, the student must also be able to apply this same process of thought reduction to a series of paragraphs. There seems to be two ways of knowing whether this, in fact, takes place; either the student expands his "Who did what" model to encompass a series of paragraphs and develops an outline, or he composes a statement which summarizes the combined essential meaning of the series of paragraphs.

The outline is probably the best evidence a student can give of his ability to recognize the essential thought and organization of a selection because to prepare it requires a considerable degree of understanding, but even this is not always enough. The mere ability to recognize or identify the elements of the outline is no guarantee that the meaning it represents is understood--recognition, in other words, is only a part (however important) of comprehension. It is not until the student is able to express the meaning of the whole outline in his own words--that is, bring to bear on it the totality of his past experiences--that we are able to determine the real nature of his comprehension. Therefore, the requirement that a student be able to make a precis--a clear, orderly, and concise statement of the content of what he has read is really a necessary consideration in evaluating comprehension. Because a good precis is concise, it is easier to remember; because it is orderly, it is a true reflection of the author's message; because it is clear, it represents the meaningful integration of this material by the reader.

Reading to perceive organization is not sufficiently stressed in the general reading improvement programs offered to college students today. It deserves more attention because it serves both as a means of grasping meaning and as the medium through which this understanding is communicated to the teacher. By understanding better how communication takes place, the student can more easily comprehend what he reads and convey his understanding to others.

THE USE OF PEER LEADERS IN STUDY SKILLS GROUPS

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During the summer of 1971, a program for delivering study skills improvement to students in their residence halls came under consideration. Ryan's work (1967) suggested a tested model making use of residence advisors (RA's) as leaders of small groups of students working on study skills. Ryan's report indicated the RA's role was changed at Oregon State University towards a more educationally relevant stance. The study skills project was useful in helping to effect that change. At VPI and SU, a concern for making a similar change in the role of the RA's was expressed by the coordinator of housing. Ryan's research established that peer leaders (undergraduate RA's) could effect study skills improvement by working with small groups of students in their residence halls.

Brown and Zunker (Brown, 1965; Brown & Zunker, 1966; Zunker & Brown, 1966) provide additional data regarding the efficacy of the peer leader as an agent in study skills improvement. These data in combination with Ryan's data warrant the conclusion that students can work with other students to bring about study skills improvement.

On the basis of this precedent, a project was developed to fit the following set of local parameters. No renumeration was possible for group leaders' work in the project. There was a maximum of one professional person on a quarter-time basis to coordinate the project.

An experimental course was implemented by giving RA's three hours of credit. That required the project to be put on a time frame of one quarter for training and practice. The first quarter was seen primarly as an experimental trial of the concepts and methods involved. Study skills improvement of the participants was the primary purpose for implementing this project. A secondary purpose was to provide training in study skills information and small group technique concepts to the resident advisors.

METHOD

Format of Project

Ryan's specific cue response and reinforcement method was selected as the basic model for this project. The specific method consists of a group leader asking a cue question of a small group and reinforcing any appropriate responses with verbal and social responses. (See Ryan, 1967, for details.) In addition, an information function was added to the specific treatment. This consisted of the group leader presenting the cue question, reinforcing the appropriate responses or extinguishing inappropriate responses, and then adding relevant information on that topic that did not arise in discussion. In other words, it consisted of all the elements used by Ryan with the addition of the group leader adding information that was apparently not available to the participants prior to the session.

Resident Advisors Solicitation and Training

The resident advisors were solicited during the summer by mail and were asked if they would like to participate in the project in return for three hours credit in an experimental course.

No specific selection process was used for the project itself. However, a selection process was used by the housing office for obtaining RA's for their positions. Brown (1965) has used an extensive selection process in picking group leaders for study skills projects and sees that as an important part of providing good service. However, Ryan's project relied almost entirely on the resident advisor selection process. This was seen by the author as an adequate means of screening out inappropriate persons. There were seven male and seven female RA's fall quarter, one female and 15 male RA's winter quarter, and six female and six male RA's spring quarter. Ten RA's worked more than one quarter. The first four weeks of training each quarter had a heavy emphasis on learning about study skills and on reviewing the relevant literature in psychology and education. RA's were also involved in discussing their own educational experiences and evaluating the activities that had been most useful to them as students. The training for the small group leadership consisted of role playing, how to start the group, how to ask questions, how to reinforce appropriate responses, how to use extinction, and when to provide information. Later in the quarter, the class met primarily as a seminar group to discuss problems that were arising in the small groups and to role play alternative solutions. The amount of time in class consisted of 12 hours for the first four weeks and eight hours for the last six weeks making a total of 20 hours in class. The amount of time RA's were in small group sessions varied from three and one half hours to seven hours. Their preparation time is not known.

Group Procedures

The small groups were four participants and one RA group leader. Group leaders worked only with participants of the same sex. The small size of the group was a function of the size of available rooms. Also maximum individual interaction seemed dependent on small group size. The group participants were solicited in the residence halls where the individual RA's were located. Participants were randomly selected from the volunteer group. There were only enough extra volunteers to constitute a single volunteer control group. The small groups met either in the resident advisor's room or in one of the study lounges in the residence hall.

The series of meetings during the fall quarter consisted of seven weekly, half-hour sessions. The first session consisted of a brief orientation and some time for talking about reasons for being in college. The second session involved scheduling followed by the third session on notetaking. The fourth session covered reading techniques, the fifth involved test strategies, the sixth was on paper writing, and the seventh involved projecting grades and evaluating the project.

Over the period of the first year, several variations were made on these series of sessions During the fall quarter all the participants were freshmen and the series proceeded as noted above. In the winter quarter the seven sessions. were administered in half as much time, i.e., three and one-half weeks. That meant two sessions each week. Most of the RA's ran two groups in the winter; one during the first half of the quarter, the other during the second half of the quarter. Sessions were again held one each week. An eighth session was added to the series and the sessions were increased to 45 minutes. Furthermore, participants were given printed materials to aid recall of study skills concepts. During the fall of 1973, the project continued as in the spring quarter with two exceptions. The unique feature added during the fall quarter consisted of a two and one half-hour workshop provided at the Counseling Center. All of the RA's and their participants were able to choose four topics from eleven possible topics related to improving study performance and student life. One of the sessions was dropped from the series and they were returned to a half-hour each, one time weekly. The emphasis this fall has been for the RA's to provide support and motivation and to attempt to mold their small groups into a base for encouraging academic achievement. The workshop at the Counseling Center was designed to alleviate some of the pressure on the RA's as the sole study skills expert the participants would contact. Furthermore, it provided a chance for the student participants to familiarize themselves with what other resources are available for study skills improvement in the Counseling Center.

Evaluation and Project Results

Fall Evaluation. For the fall of 1971 there were a number of questions regarding the viability of the project. The primary question was one regarding the amount of motivation RA's would have based on three hours of course credit, i.e. would they be willing to invest the necessary time? An equally important question concerned RA's training concurrent with their service function as group leaders. Finally, the question of how well the participants would respond to the project on our campus required an answer. These questions were answered during the first quarter.

The resident advisors proved to be very enthusiastic about the project. Partly this seems to be a result of their interest in changing their role from one of disciplinarian to that of helper. The concurrent training and practice led to some difficulties. Mainly, it was not possible for the *RA* to have all the information needed at the beginning of the project. In answer to the third question, the general response of the participants was favorable during the fall quarter. Table I provides data regarding the attendance over all three quarters. Attendance ran consistently over 90% indicating a high degree of involvement. Almost all of the participants indicated that the project was enjoyable. It was found that even though the group leaders were not always seen as being influential in changing behavior, the project was still seen as being useful to the student. The *RA's* responded favorably this first quarter and 11 of 14 indicated that they would like to continue work in the study skills improvement program. Furthermore, the Brown-Holtzman *Survey of Study Habits and Attitudes* was given before and after the participants had been through the project and on each of the seven scales the change was significant at the five percent level.

Table II provides grades for male and female treatment students for the fall quarter. The male treatment group made a significant increase from fall to spring quarter ($t = 2.02$, $p < .05$). The random control group (matched by high school rank) males obtained significantly higher fall grades than the treatment group but made no increase over the academic year. For the females, the fall quarter showed very little difference among the three groups.

Due to the rather discouraging grade comparisons with control groups, the following spring in May, the fall participants were interviewed to determine their opinions regarding the project. Fourty-six of the original 56 (82%) were obtained for interview. About 90% indicated that they still felt the project was useful. Ninety-four percent claimed they were applying methods learned during participation six months

TABLE I PROJECT EVALUATION, PARTICIPANT RESPONSES BY QUARTER OF PARTICIPATION

Questions	Fall (54)*		Winter_1 (53)**		Winter_2(36)**		$\text{Winter}_{\bar{x}}$(89)**		Spring (72)	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Did you enjoy working on the Special Study Project?	94%	6%	89%	11%	89%	11%	89%	11%	93%	7%
Did your Group*** Leader influence your behavior in any way?	69%	31%	74%	26%	67%	33%	71%	29%	63%	37%
Would you recommend the Special Study Project to other students with study problems?	-	-	100%	0%	92%	8%	97%	3%	97%	3%
Are you studying better than before the project?	-	-	74%	26%	56%	44%	66%	34%	72%	28%
Attendance Rate	92%						92%		92%	

* Numbers in parenthesis indicate participant group size.

** Winter Quarter responses are given as follows Winter_1= first half of quarter, Winter_2= second half participants, $\text{Winter}_{\bar{x}}$ - is mean for both halves.

*** Ambivalent responses fall in "NO" category.

TABLE II FALL* 1971 PARTICIPANTS' GRADES COMPARED WITH CONTROL GROUPS BY QUARTER

	Fall			Winter		Spring	
	N**	$\bar{X}$	S.D.	X	S.D.	X	S.D.
MALES							
Treatment	15	1.98	.66	2.02	.74	2.30	.51
Control	15	2.64	1.02	2.61	.90	2.68	.82
Stratified by HSR							
Treatment, lower half	6	1.62	.54	1.99	.68	2.20	.51
Control, lower half	6	2.41	1.36	2.44	1.16	2.58	.92
Treatment, upper half	9	2.22	.65	2.05	.82	2.37	.53
Control, upper half	9	2.80	.77	2.71	.73	2.74	.80
FEMALES							
Treatment	23	2.50	.66	2.52	.69	2.45	.66
Control, Random	23	2.40	.72	2.32	.58	2.40	.70
Control, Volunteer	21	2.69	.57	2.63	.75	2.91	.70
Stratified by HSR							
Treatment, lower half	10	2.26	.70	2.23	.73	2.22	.75
Control, random lower half	8	2.04	.89	2.24	.72	2.33	.63
Control, volunteer lower half	10	2.37	.29	2.19	.71	2.63	.66
Treatment, upper half	13	2.68	.58	2.75	.58	2.63	.53
Control random, upper half	15	2.59	.54	2.37	.52	2.44	.75
Control, volunteer upper half	11	2.97	.63	3.02	.33	3.17	.43

* All Fall participants were freshmen.

** Only Ss with complete data are included.

earlier. A sizeable number (63%) found the groups provided a social outlet. Because there was a question regarding the possibility that a student might feel over-confident because of this project, they were asked if they had a false security because of participation. Almost all (65%) stated they felt no false security because of the project. Furthermore, almost all (98%) would recommend the project to a friend that was having study difficulties. And even a reasonable percentage (61%) reported they were passing on information obtained in the project to friends.

Winter Evaluation. During the winter quarter, the participants were all males. Again, participant response was mostly favorable. In Table I the results are broken down in Winter_1 and Winter_2 for convenience in comparing participants who were involved during the first half of that quarter and the second half of that quarter. The primary difference between these two groups appears as a response to the question, "Are you studying better than before the project?" Those students who participated during the second half of that quarter seemed to respond less favorably to that question, with only 56% answering affirmative in comparison with 74% for first half participants. On that basis it appears more useful to work with students during the first half of the quarter in order to obtain a change in behavior. (Obviously, there are other confounding factors here.) A comparison with the spring quarter evaluation indicates that the first winter session report on study behavior is on a par with students who went through an entire eight weeks in the project.

Grades from fall and spring were used as pre- and post-measures for the winter quarter participants as seen in Table III. The total group (all male) made a significant improvement in

TABLE III WINTER* 1971 - 1972 PARTICIPANTS' FALL AND SPRING GRADES

		Fall			Spring			
Totals	N	$\bar{X}$	S.D.	d	$\bar{X}$	S.D.	r	t
Treatment	71	2.38	.82	.20	2.58	.72	.65	2.60**
Control	64	2.38	.73	.06	2.44	.75	.54	ns
Class								
Treatment Frosh	23	1.84	.74	.42	2.26	.70	.58	3.00**
Control Frosh	21	2.09	.55	.06	2.15	.50	.55	ns
Treatment Soph	37	2.63	.79	.16	2.79	.75	.65	ns
Control Soph	32	2.54	.80	.02	2.56	.89	.49	ns
Treatment Jr.	10	2.65	.55	-.07	2.58	.43	.33	ns
Control Upper class***	11	2.51	.74	.11	2.62	.60	.80	ns
Treatment Sr.	1	2.40	-	-	2.71			
Stratified by HSR (Treatment *Ss* only)								
lower 1/3	26	1.91	.68		2.31	.43	.65	4.17**
middle 1/3	23	2.58	.46		2.62	.49	.44	ns
upper 1/3	22	2.72	.50		2.88	.73	.74	ns

* All Winter participants were male.

** Significant beyond .01 level for repeated measures *t*.

*** Includes one senior, 10 juniors

TABLE IV **SPRING PARTICIPANT PRE AND CURRENT GRADES**

		Pre		Current			
	N	$\bar{X}$	S.D.	$\bar{X}$	S.D.	r	t
Totals							
Males	23	2.59	1.46	2.79	1.35	.93	2.00*
Females	17	2.36	.56	2.50	.60	.80	1.56
Class							
Frosh	16	2.59	1.73	2.57	1.53	.96	ns
Sophomore	10	2.22	.75	2.46	.90	.84	1.50
Junior	14	2.57	.37	2.93	.46	.58	3.60**
Senior	0	-	-	-	-	-	-
Stratified by HSR (male and female combined)							
Lower 1/3	15	2.70	1.78	2.75	1.58	.96	ns
Mid 1/3	11	2.38	.51	2.57	.75	.82	1.36
Upper 1/3	14	2.36	.59	2.66	.67	.73	2.31*

* Significant beyond .05 level for one tailed *t*-test for repeated measures.
** Significant beyond .01 level for one tailed *t*-test for repeated measures.

grades in the spring quarter over the fall quarter increasing .20 on a 4.00 scale. An analysis of covariance using class as an independent variable and high school rank as the covariate indicated that within the treatment group there was no significant differences among the classes despite the large amount of change made by the freshmen class participants. A comparison was made by analysis of variance on _d_ scores in a 2 x 3 factorial (class x treatment) yielded no significant main or interaction effects. A _t_-test between the treatment freshmen and the control freshmen produced a significant _t_ for the difference (_d_) between the fall and spring grades. Treatment freshmen improved .40 in their grades in comparison with a .02 for the control freshmen (See Table V).

In conclusion the results for the winter quarter provides some evidence that the project helped the freshmen student improve their grades significantly. In addition, the _Survey of Study Habits and Attitudes_ provided evidence that the treatment students made a significant increase in their reported study behavior.

Spring Evaluation. For the spring quarter participants the response looks much like the winter quarter participants as seen in Table I. Table IV provides grade information on the treatment students during the winter and spring quarters only. These results indicate the males have made a significant increase during the spring quarter over the winter quarter grades. Furthermore, it indicates that the junior males are the ones that made the most change in grade. A one-way analysis of variance on the change scores (_d_) indicates no significant difference in rate of change between the freshmen, sophomore, and junior classes. Also indicated in Table IV is that students in the upper third of their high

TABLE V

Intergroup Comparisons on Grade Change

WINTER	N	d	df	t	P
Treatment upper class vs	11	-.04	32	2.095	<.05
Treatment Frosh	23			(two tailed)	
Treatment Frosh vs	23	.40	42	2.111	<.05
Control Frosh	21	.02		(one tailed)	

school rank are the ones who significantly improved their grades. These data seem to be in conflict with the data of the winter quarter students which indicated freshmen made the best use of the project and from the lower third of the high school rank were those who seemed to be making the largest changes. As with the previous two quarters, the spring quarter participants made a significant increase on all of the SSHA scales. A control group has not as yet been developed to make comparison with the spring quarter participants. A total of 40 RA's worked with 251 participants during the academic year. Complete data files were not available for all participants.

DISCUSSION

One of the anomalies of this project is that the male students benefited most. In the past, in Ryan's work and in others, it has been noted that females usually respond more favorably to study skills improvement programs. Improvement of academic performance can result in better grades or more free time or some combination of the two. The validity, therefore, of using grades as a criterion is at best questionable. Indeed the purpose of this type of project is to help people improve for whatever reasons they deem appropriate. This Fall(1972) an attempt is being made to identify students according to the purpose they chose (i.e. grade improvement or increase in non-study time). By identifying the participant's goals a more realistic evaluation may be possible. The available data do seem to indicate that students view this project as having favorable consequences on their lives and in some cases the project produced an increase in academic performance as measured by grades.

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SPELLING AND READING ARE VISUAL SKILLS

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Most reading research has been based on the theory that if the efficient reader's eye movements and thought processes could be identified, effective reading methods could be developed. This type of research has found that:

1. Most students do not make ungrammatical or meaningless errors or substitutions (Goodman, 1969; Weber, 1970).
2. Skilled readers intuitively use phrase or thought unit markers (Levin, 1970).
3. Readers probably gain knowledge by a constructive process of analyzing and synthesizing distinctive word features (Neisser, 1967).
4. No optimum unit for teaching reading has been identified (Wanat, 1972).
5. Pronounceability is not a factor, but "letter groups in characteristic positions are evidently important features in word-recognition" (Gibson, 1963).
6. Seeing a word in sound units hinders the poor speller. (Russell, 1967).
7. Sound syllabication is a test of reading skills, not an aid in learning to read (Shuy, 1969).

Although this is only a sampling of findings, a survey of published research indicates that Bruner's advice that "the fundamental structure of material to be learned should be presented in a form that can be apprehended intuitively" has not been followed in the reading field.

This paper proposes a code for organizing the structure of all languages so their visual clues to spelling, pronunciation, syntax, and meaning are visible. It will show through this code what the distinctive word features are that act as guidelines to logic in spelling and to meaning search in reading.

PROCEDURE

To discover the established structure of the English language, etymological dictionaries were studied because they provide not only the historical changes that have taken place in a word's form and meaning, but they give a word's root and stem forms, which sometimes are identical. Stem identification also established the letters in prefixes and suffixes. These etymologically verified units revealed that stems, prefixes and suffixes could be classified in six groups on the basis of their final vowels and consonants. This organization not only provided visual clues for reasoned spelling and pronunciation, but indicated the way each part of a word should be viewed to find grammatical and meaning clues in the reading process.

SUFFIXES

Because suffix units are to words what function words are to sentences, and because they appear on a page as frequently as function words, their characteristics will be discussed first.

Although suffixes are usually presented in vocabularly and English texts with their dictionary meanings, their primary function in most words, other than Greek-derived ones, is to show syntax and to point to the meaning units of words. A knowledge of suffixes that uniformly indicate categories such as smallness, persons, or beliefs is valuable, but instant recognition of a word's suffix units as clues to the grammatical structure of a word or sentence facilitates spelling and reading. Often they are the largest part of a word.

There are less than one hundred suffixes. Thorndike identified eleven as used frequently: -ion -tion, -ation, -er, -y, -al, -ent, -ful, -ty, -ly, -ure. These eleven form combinations which demonstrate the reasons the individual who does not see spelling as a regular joining of structure units, produces misspelled words. Note the number of double l's that are necesary for each of the following suffixes to keep its identity: -ally, -fully, -urally, -ionally, -entially.

Classifying suffixes according to their final vowels and consonants, as they are in the table below, reveals visual clues for spelling, pronunciation, and syntax. This grouping reveals the pitfalls that may trap the speller or reader who is unaware of word patterns.

Class I contains units that end in one vowel followed by two consonants. All of these suffixes are easily recognized and spelled. However, a speller unaware of stem clues may choose incorrectly between -ence and -ance and their related forms (Wolf, 1972).

Class II contains units that end in one vowel followed by one consonant. A speller must be sure that each suffix keeps its identity when another suffix is added.

Class III contains units that end in two vowels followed by a consonant. This grouping makes suffix syntax and pronunciation clues visible.

SUFFIXES

Class I (VCC..)	Class II (VC)	Class III (VV..C..)	Class IV (V..C..E)		Class V (V...)	Class VI (CY)
-ant	-al*	-ous	-able	-ose	-ee	-acity
-ent*	-an	-acious	-ace	-ure*	-ia	-ancy
-escent	-ar	-ageous	-age	-ble	-ie	-ary
-est	-ic	-ious	-acle	-cle		-ery
-ess	-us	-itious	-ance	-dle		-ably
-ing	-en	-eous	-ate	-gle		-ability
-ish	-el	-orious	-ative	-tle		-ibly
-ism	-ful*	-ation*	-ible	-like		-ify
-ist	-er*	-ion*	-ice	-some		-fy
-ling	-or	-ition	-icle			-ity
-less	-eis	-orium	-ile			-ory
-ment	-osis	-hood	-ine			-osity
-ness	-ol	-ian	-itude			-ly*
	-ad	-eer	-ive			-ty*
	-itis	-ier	-ize			-y*
	-sis	-old	-ence			
	-ric	-ion (electrified particles)	-esce			
			-ide			
			-ite			
			-ate			

Code: * = most frequent.
Below line in II, III, IV are Greek.

Words ending in -ous are always adjectives. A speller can use this information to distinguish between nouns that end in -us and adjectives that end in -ous and not be indecisive because their sounds are similar. -ion indicates words used as nouns; -ian, -eer, and -ier often indicate people. Pronunciation clues indicate that the name of a will always be used for -ation, -acious, -ageous, and the sound of i for -ition and -itious.

This class reveals an error that even dictionaries have perpetuated year after year and dramatizes how ingrained emphasis on sound has become. Etymologically there are only the forms -ion, -ation, and -ition; -tion, -sion, and -cion are sound units, not structure units. This error keeps the poor speller from realizing that his clue to whether t, s, or c precedes -ion lies in the final letter of the stem. Taught structurally and visually he might even discover that the only words that have sh before -ion are fashion and cushion.

Class IV contains units that end in a final e preceded by a consonant. Because this class has so many suffixes, its patterns and principles should be stored in long term memory. The silent e spelling rule for one-syllable words can be applied to joining a silent e suffix to another suffix, but the silent e pronunciation rule cannot be applied indiscriminately to silent e suffixes or Greek-derived words. Many times syntax will be a clue to pronunciation, e.g., associate (v.), associate (n.); or separate (v.), separate (adj.).

Class V has few one-syllable words or Latin non-word stems and even fewer suffixes. It contains all units that end in one or more vowels other than the silent e or consonant y.

Class VI contains all suffixes ending in consonant y. Together, Class VI and Class IV contain almost one-half of all the suffixes. Pronunciation and spelling rules for one-syllable words apply here. In a series of suffixes it is helpful for the reader to know that i has replaced y, e.g., -eriousness, -mysteriousness; -arial, -secretarial.

PREFIXES

Prefixes offer clues to meaning and pronunciation. As with suffixes, their number is limited. There are only sixty-six if assimilated forms are not included, but 250 if all assimilated forms are counted. Stauffer identified the following as those used most frequently: ab-, ad-, be-, com-, de-, dis-, en-, ex-, in-, pre-, pro-, re-, sub-, un-. Because these fourteen are structurally representative of all prefixes, grouping them by their final vowels and consonants tells something about prefix problems. Almost all prefixes fit into either Class II or Class V.

Class II (VC)	Class V (CV..)
ab-	be-
ad-	de-
com-	pre-
dis-	pro-
en-	re-
ex-	
in-	
sub-	
un-	

Those in Class II give no pronunciation problems, but lack of knowledge about the assimilated forms of ad-, com-, dis-, ex-, in-, and sub- can cause spelling problems. Those in Class V may give pronunciation, spelling, and meaning problems. Sometimes these letters are the beginning letters of a stem and not a prefix, e.g., pretzel, decade. To reason the correct spelling of words containing the prefixes be-, de-, and pre- the student must know that they have no other forms. Pro- and re- add a d only before a stem that begins with a vowel. Because most stems start with a consonant this pattern doesn't occur often. This knowledge keeps a student from spelling recommend with two c's or reference with two f's. These prefixes require the name of e or o more often than their sounds.

STEMS

Just as the majority of the most-frequently used words are signals to where the thought in a sentence lies, so the affixes are signals to where the thought in a word is centered. If all affixes are removed, what is left is the stem or base of a word. It is the structure unit that is central to a word's meaning. It is the part that is most often accented. Reasoning about the correct spelling of a word revolves around the structure of the stem. The stem may be the word itself or a non-word stem that requires a prefix and/or ending to make it usable. In Greek-derived words it is called an element and two elements or more may be joined or one element may be joined to a prefix or ending. The stem's position in a word depends on whether the word has no prefixes or endings or many prefixes or endings, e.g., jumping, abuse, psychology, nationally, necessary, recommendation, antidisestablishmentarianism.

Division of stems into one-syllable words, non-word stems, and elements shows that derivation is sometimes a clue to the application of spelling and pronunciation guides. It visualizes the reasons for showing students above fourth grade the patterns and principles of the words in their content area subjects. Because non-word stems and Greek-derived elements are used to form thousands of words and to create new words when needed, and one-syllable words make new words only by combining into compound words, there are always more one-syllable words in any class than there are non-word stems or elements. This fact has led the author to the theory that the most educated English-speaking person probably does not use more than 2,100 units including prefixes and suffixes. A few examples of these stem units are arranged below according to their final letters:

	One-syllable words	Latin-derived stems	Greek-derived elements
Class I (VC...)	black	struct	therm
Class II (VC)	rob	fer	crat
Class III (VV.C..)	boat	ceed	seism
Class IV (V..C..E)	bake	cede	scope
Class V (CV..)	do	fici	___
Class VI (CY)	try	ply	cracy

SYLLABICATION

When words are divided into structure units described in this paper, structure syllabication takes place. If reading and spelling are visual skills, structure syllabication is a useful tool. Roger Shuy has shown that present sound syllabication rules test a student's reading ability rather than help him learn to read. Russell showed that seeing words in syllabified form hinders the poor speller. Structure syllabication, which does not distort a word's meaning units, could help students see the lexical relationships among words that Carol Chomsky and Venezky have highlighted. Structure syllabication would give students visual rules to follow that are simple and uniform for all words, even for any alphabetic language. Now that machines are taking over printing, structure syllabication could be used in printing. Below are words with the stem fin divided into structure and into sound units to show which gives the most valuable visual clues.

Structure-Meaning Units	Sound Units
fin -al	fi -nal
fin -al -ity	fi -nal -i -ty
fin -ite	fi -nite
fin -al -ly	fi -nal -ly
fin -al -e	fi -na -le
fin -ance	fi -nance
fin -ance -ier	fin -an -cier
de-fin -e	de- fine
de-fin -ite	def -i -nite
de-fin -ite -ion	def -i -ni -tion
de-fin -ite -ive	de- fin -i -tive
de-fin -ite -ly	def -i -nite -ly
af-fin -ity	af- fin -i -ty
in-fin -ite	in -fi -nite
in-fin -ity	in- fin -i -ty
fin -ish	fin -ish
con-fin -e-ment	con- fine-ment

CONCLUSION

If spelling and reading are visual skills, languages should be organized so visual clues can be learned easily by those who are not already using them intuitively. By organizing structure units, prefixes, stems, and suffixes, on the basis of their final vowels and consonants, into six classes, pronunciation and spelling principles, and syntax and meaning clues for these patterns become visible. The six-class code shows that the distinctive word features that should act as guidelines to logic in spelling and to a meaning search in reading are the final letters of a word's structure units.

Further research should be done to test whether the units identified by analyzing written language are the same ones that skilled readers are using when researchers' observations result in reports that "letter groups in characteristic positions are evidently important features in word-recognition."

The author's research on spelling confirms that the able speller sees spelling as the process of joining structure units and that he uses clues in the final letters of the units.

Trial applications of the six-class code to foreign languages indicates that possibly it can be used to organize all alphabetic languages. If further research proves this true, a common approach to all written languages could be developed.

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INVESTIGATION OF HEART RATE AND THE READING PROCESS

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I am impressed by the fact that in many ways reading teachers and reading researchers share common interests. Admittedly, they look askance at each other across certain questions. Often, for example, the service versus research way at looking at reading tests or treatment programs seems to produce different vistas of the same situation. For the most part, reading teachers are warm-hearted and reading scientists seem to be cold-hearted. In point of fact, reading scientists are no-hearted. A very careful search of the literature failed to locate any previous research on reading that used heart rate as a variable.

Why, you might ask, bother to make that search? Frankly, I had two reasons. One was that as a researcher, I had a long-standing commitment to a real time behaviorial measures in reading. For example, reading rate on a passage is usually measured in a time sample of one to three minutes. Yet a close look at what takes place reveals tremendous fluctuation of rate within that interval. These data are usually lost in reporting a single, average reading rate. Similarly, we assume comprehension as consistent throughout a test period. Yet there may also be wide swings in that variable if we could only find ways to measure it. Some on-line physiological measurement is called for, and heart rate seems like a possibility. In addition, the idea appealed to me.

My second concern was with the problem of emotional factors in reading. As a reading skills specialist who happens to be a counselor, I work with many students who are clearly emotionally disturbed by their reading problems. They panic on exams, or can't give the main idea of a paragraph when they had just given a very clear summary of the paragraph immediately preceding it. These behaviors seemed to me to suggest extreme anxiety, perhaps even a type of phobia to reading (Wark, 1971). Systematic desensitization techniques (Wolpe, 1969) came to mind as a type of treatment. And physiological variables, especially heart rate, are relevant to the technique.

In summary then, I became interested in heart rate for two reasons. One was my concern to find an on-line measure of reading; the other was to get some handle on the treatment technique for reading phobic students.

Review of Cardiovascular Research Relevant to the Reading Process

Some of the crucial work relating physiology to reading was done by Lacey (1959) who followed up two interesting prior students. Rowland (1936) noted that subjects reading type-written material showed higher physiological measures the greater the "exciting" character of the material. Mittleman and Wolff (1939) found temperature increases in a subject who was reading political speeches. In reviewing these and other studies, Lacey noted a direct positive relationship between the "intensity" of the reading stimulus and the amount of increases in heart rate, breathing, skin response, etc. Lacey's major contribution, however, was to pinpoint those situations in which, as the stimulus increased in intensity, some physiological responses indeed went up, while others fractionated and surprisingly, went down.

On the basis of his analysis, Lacey posited two kinds of tasks. One, "environmental rejecting" tasks, included mental arithmetic, completing sentences and tolerating pain. These apparently involved rejecting outside stimulation and focusing on important parts of the environment. In general, during these environmental rejecting tasks, heart rate increased.

The other type of task, "environmental intake", is associated with a drop in heart rate. In these situations, subjects were told to look at flashing lights or listen to unpleasant dramatic readings. There were no specific tasks demanded of the subjects.

Campos and Johnson (1966) offered some evidence to extend the effects of heart rate and reading. They demonstrated that when subjects are instructed that they will have to talk about or vocalize what they have seen, there tends to be an acceleration in heart rate. When the same task is used but there are no instructions about future descriptions, there tends to be a drop in rate. Buck et al (1969) also found heart rate deceleration when students were asked to look at slides but without a request to talk about them. However, when the same slides were presented with requests with descriptions in the future, heart rate went up.

What then does the analysis by Lacey and the research by Campos and Johnson, and Buck suggest regarding heart rate and reading? Readers merely looking at material to kill time, with no specific task demands and no suggestions that they will have to discuss the material, should show heart rate deceleration. That is, they should be operating in a strict environmental intake model. The casual reader, the unconcerned reader, the recreational reader, all should show a drop in heart rate.

Under other circumstances, suggested by the research, there might be an increase in heart rate. That would be a situation associated with threats of tests or implied or actual demands to answer questions about the material. Several experiments were conducted in attempt to understand more fully the relationship between reading and heart rate in academic situations.

Initial Experimental Investigation

Volunteers at the University of Minnesota participated in all of the studies. In each one procedures were essentially the same. The subjects were introduced into the experimental room and shown how their heart rate would be measured by a Metronic Digital Cardiotachometer (Wark, Tostenrud, and Nelms, 1972). Then they were requested to rest with their eyes closed in order to measure based heart rate. Next they were presented with cards from the high school, college and adult level of the reading eye test (McGraw-Hill, E.D.L., 1958). The subjects in the first study were told whether there would be tests on the reading material or not. The students alternated reading and resting. The resting period mean heart rate was considered the base.

The results, reported in Table I, are quite consistent with the derivations from Lacey's rejection and intake formulations. In the rejection or "question" condition, fifteen of the sixteen differences were positive for an overall increase in heart rate. Conversely, under the intake or "no question" condition there was an overall drop from the resting to task rate. According to the Mann-Whitney U test, the hypothesis of no difference between conditions can be rejected at p less than .001. Clearly under the circumstances of a non-questioned, quasi-recreational situation, heart rate goes down. But under the circumstances of test-like reading, with requests for summaries later, rate goes up.

TABLE I

Test Card	1	2	3	4	5	6	7	8	$\overline{D}$
				NO QUESTIONS					
S_1	+0.7	-0.3	-2.6	-0.7	-1.5	+1.1	-7.2		-1.0
S_2	+5.8	+7.6	-1.0	-4.6	-8.1	-9.9	-6.5	-13.6	-3.7
				QUESTIONS					
S_3	+2.7	+3.3	+9.2	+3.0	+3.6	+1.2	+2.5	+ 5.8	+4.2
S_4	+6.7	+0.4	+0.5	+4.8	+3.1	+6.5	+5.8	-0.4	+4.4

MEAN DIFFERENCES IN HEART RATE FOR RESTING AND READING

$P\ (Q=NQ) < .001$

Check on the Stimulus Material

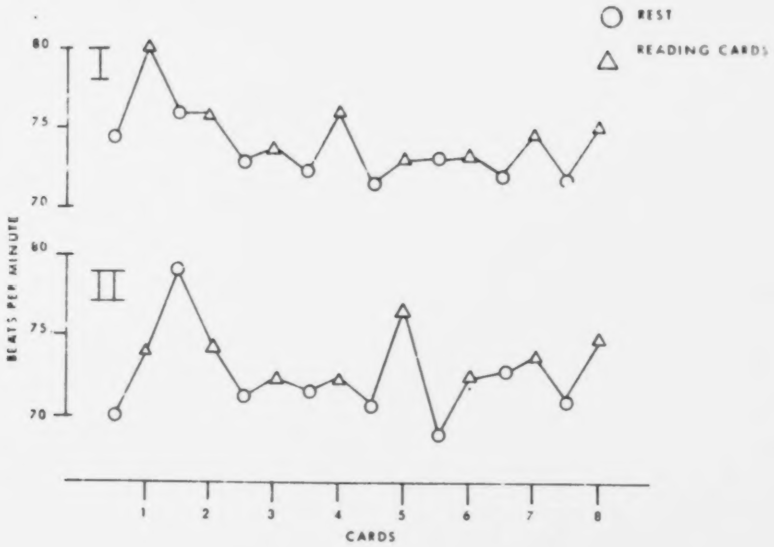
Two groups of students from an Efficient Reading course at the University of Minnesota were run to demonstrate a check condition in which the same subject was tested in both the question and non-question situation. The first three cards in Experiment II or the first four cards in Experiment III were not questioned. At the appropriate place in their series the students were told unexpectedly that they would be tested on material on the next and all following cards. If the critical cards did not affect the pattern of heart rate, then the whole response fractionation and intakes/rejection hypothesis would have to be revamped. The results represented in figure 1.

In both groups there was an initial acceleration over base rate for the first reading card. However, the difference between resting and reading decreased consistently. Then at card four in Experiment II and card five in Experiment III there was marked increase in heart rate while reading. The overall pattern of the two curves are quite similar. The only difference is the acceleration clearly associated with the test card. Clearly the condition and not the content of the card did produce an acceleration in heart rate.

Relationship Between Test Anxiety and Heart Rate

One of the major sources of concern for the heart rate research was to look at the relationship between cardiac response and reading in test-anxious students. To that end, introductory psychology students at the University of Minnesota were asked to volunteer for participation in Experiment IV. They were screened to collect only students who had in fact experienced test panic in the past and who would

FIGURE 1



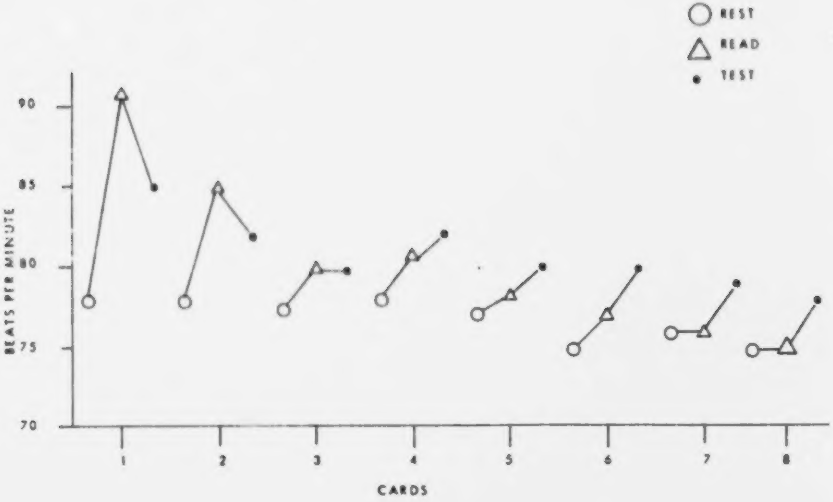
HEART RATE EFFECTS OF READING TO ANSWER QUESTIONS like a chance to get help in overcoming it. They were in essence self-validated test-anxious. In the experiment they alternated between reading and resting assignments while connected to the cardiotachometer. They knew they would be tested on each paragraph. In addition, their heart rate was measured while answering the ten oral comprehension questions. The results are shown in figure 2.

We note in this self-identified high anxious group initial extreme acceleration in the heart rate from the resting condition. However, the difference flattens out rather quickly. By the fifth exercise, reading is only slightly more arousing than rest. However, answering questions orally continues to produce an elevated response. In terms of the reading process, reading to answer questions for these students seems to involve a systematic shutting out or rejection of the environment. Test panic students may be rejecting parts of the texts in front of them, and answering questions in terms of previous or irrelevant knowledge. That leaves an interesting question: Would students who were test calm show the same kind of rejection pattern? Or would they show an environmental accepting pattern of lowered heart rate when reading to answer questions? Experiment V answered that question.

Comparison of Cool and Anxious Subjects

The study was designed to compare validly test-anxious with validly test-cool subjects in terms of heart rate pattern. It was necessary to control for physiological arousal and examine two groups of students, one composed of students who wanted help for test panic and the other who felt they needed none. Fifteen students from the Psychology Department of the University of Minnesota volunteered for the research. They came in response to a request

FIGURE 2

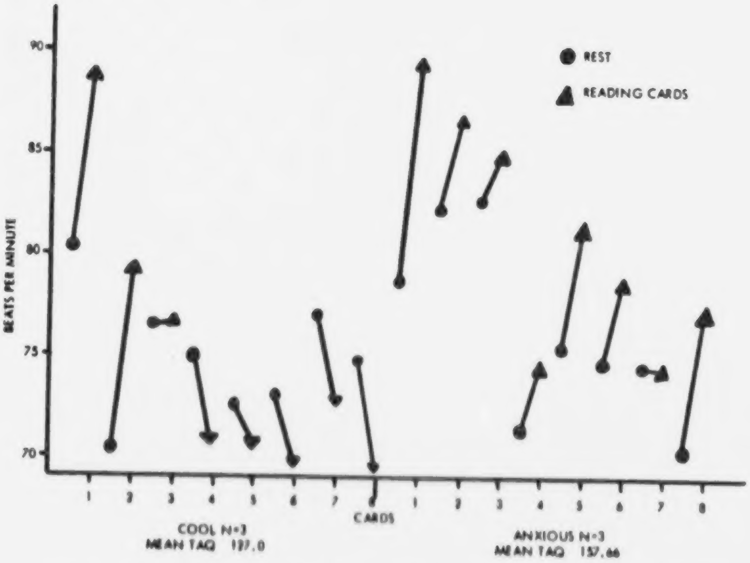


HEART RATE PATTERNS OF HIGH TAQ STUDENTS for students who felt they were either extremely cool or extremely anxious when taking tests. Each subject took the Test Anxiety Questionnaire (Mandler and Sarison, 1952) to measure felt arousal during test situations. The average score for the three students reporting no anxiety on tests (127.0) was significantly lower than the nationally reported mean (179.3 to 181.5). They were matched with three subjects out of a pool of twelve who report a great deal of anxiety. The three used in the comparison had a TAQ mean of 157.66, not significantly different from the three cool students. However, the three anxious students all wanted assistance in overcoming test panic while the three cool students did not.

The methods used were essentially those of the previous studies. Students alternated between resting with their eyes closed and reading and answering questions. The material was the same test cards. Heart rates were average for each reading and resting session.

The general level of resting heart rate for both cool and anxious students was about the same. Across all reading passages, the resting mean for the anxious group was 76.28 and for the cool group 75.34. While reading, the students in the cool group produced approximately the same mean, 75.07. But the anxious subjects showed a marked increase, suggesting rejection, to an overall mean of 81.06 beats per minute. The differences for the anxious group replicated the prior findings and confirmed the prediction of environmental rejection. However, for the cool students there was no hoped for drop in heart rate, no evidence of the acceptance patterns. However, when the means for each card were graphed, a totally different picture appears, as shown in figure 3.

FIGURE 3



HEART RATE CHANGES FOR COOL AND ANXIOUS STUDENTS

There is a clear distinction between the patterns of the two groups. The anxious group shows a rejection pattern all of the way through the test sessions, with only one exception. The cool group, following card three and for the rest of the series, showed a clear acceptance pattern. Their heart rates dropped during reading, even though they, like the anxious students, knew they were going to answer questions.

Discussion

Where then do we stand on the relationship of heart rate and reading? Cool students, unconcerned about test panic, seem to be taking in the environment about them. That is, during reading they focus on words and thoughts. The test-anxious student seems to be rejecting the text. The mode of respondings may have to do with their feelings and discomfort, rather than the material they are reading. Recent research by Wine (1971) supports this notion of the difference between calm and panicky students. She states that one defining characteristic of the test-anxious student is an excessive concern for internal states, rather than for the content of the question. She cites informal studies in which panicky students, given relaxation exercises and taught how to focus on questions rather than their internal states, improved their ability to take tests. Apparently, relaxation to reduce physiological disturbances and exercises to focus on the environment are helpful in overcoming test panic.

Clearly, the studies reported in this paper justify further research into the heart rate response of reading. These data, taken along with Wine's, seem to suggest that comprehension involves the heart as well as the brain. If so, there might be an interesting new way of treating low comprehension. That is not to say that a cardiotachometer is going to become as common as reading pacers and practice manuals. But skills specialists should certainly know about the machine, and what it implies about reading. Perhaps my interest as both a researcher and a teacher is finally coming together and leading me to the heart of the problem.

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METAPHORS OF TEACHING READING

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Within the past eighteen months I have been concerned with making a checklist or personal inventory of items to be responded to by prospective or practising teachers of reading, supervisors of reading teachers, and specialists in reading instruction, as a suggestive means of self-appraisal. But fundamental to any such enterprise is obviously the clear answer to a blunt question or two:

> What is a good reading teacher?
> or
> What is good teaching of reading improvement?

One way to discover answers to these very hard questions is to start with major essentials for the qualities of a reading instructor. Take for example the prescription promulgated by the International Reading Association. Titled "Minimum Standards for Reading Specialists," the requirements are these:

> three years of successful teaching or clinical experience, master's degree or a bachelor's degree plus 30 graduate hours in reading and related areas such as:
>
> > twelve hours of graduate courses in reading
>
> to include at least 2 of the following foundation courses:
>
> > psychology of reading
> > diagnosis and correction of reading difficulties
> > clinical or laboratory practises
> > supervision and curriculum in reading

All the above requirements obtain plus another course -- still more -- in testing, child or adolescent psychology, personality and mental hygiene, or educational psychology.

Now these are the bare bones. The requirements have been stated in full here so as to move on to another set of requirements on which California people interested in teaching reading improvement and in teaching teachers of reading improvement have been slaving away for many, many months.

Competencies

These we now call "Competencies for Accreditation of Reading Specialists."

These attributes are to encompass all levels from kindergarten to adult. The total number of competencies is 24. Digested as succinctly, and yet as faithfully as may be, these comprise the following. Each competency is so expressed as to demand that the person demonstrate his capabilities in these many ways:

He is to be able to SELECT, USE and EVALUATE both group and individually-administered tests

PLAN, USE, and EVALUATE developmental, corrective, and remedial reading programs on the basis of group tests. (Unfortunately, the GIFTED category is not even considered here.)

KNOW and ANALYZE the strengths and weaknesses of at least four basic approaches to reading teaching.

KNOW the key components of developmental programs such as readiness, word recognition, comprehension, and expression skills. So far this group totals five competencies. In addition these are included:

SHOW ABILITY to assess student readers' independent, instructional, and frustration levels and determine expectancy for each reader.

DEMONSTRATE ABILITY to determine special needs and to refer readers to service agencies for severe difficulties.

PROVE ABILITY to produce a thorough description of a reader's previous and current social, linguistic, psychological, physical, and academic status as any or all of these characteristics may relate to his reading difficulties.

PRODUCE A CASE STUDY in depth based upon the subject's background, abilities, and needs, as well as a written LOG for each instructional session.

RECOGNIZE and RELATE a student's learning patterns to basic theories of learning, reading, and thinking.

The twelfth competency gets to the matter of recognizing the unique difficulties of ethnically different readers and of designing instructional accommodations to meet these special needs.

The remaining dozen competencies are more direct than the preceding twelve, especially as regards the application of these general principles to particular matters like adapting linguistic components to reading instruction, applying motivational methods to develop reading skills, selecting reading materials suitable to individual or particular reading programs. Also there is emphasis upon knowing how to set up and operate reading laboratories, classrooms, and clinics; upon knowing group and individual testing instruments well enough to recognize their applicability, strengths, and weaknesses. Other emphases concern the recognition of the importance of ethnical and cultural differences as regards learning and reading, stress the importance of competency in providing in-service educational presentations to peers, parents, and tax-payers. Finally, three additional competencies have to do with interpersonal communications, with knowing how to read and utilize published research, and with taking advantage of the learning opportunities to be gained from conferences and meetings of reading teachers.

Of course it should be understood that these are condensed statements to about one-fifth of their original length and depth and breadth. All are most important in the enterprise of excellent reading instruction.

Note well, however, that all these abilities correspond in one way or another rather effectively to the current and pervasive insistence upon ACCOUNTABILITY. But the very nature of that which contributes to accountability is its quantitative features. In other words, if I cannot

measure it,
count it,
weigh it,
taste it,
grade it objectively upon some scale such as 1-10, then

it can NOT really be significant, valid, or desirable........But in determining excellence in teaching, or practising medicine, law, or dentistry, for example, not every attribute can be limited to the category of quantitative to the utter exclusion of the qualitative.

One major difficulty -- or roadblock, to use a metaphor -- in characterizing a good teacher, or an effective and successful teacher, is the fact that EVERY instructor, every professor is convinced (except on dark and rainy Mondays or during a bout with the determination of semester grades), that HE IS A SPLENDID TEACHER. How does he know that? WEllllllll, he just knows it -- he may admit that perhaps two or three colleagues are also pretty good, or even first rate teachers most of the time. But from an overall perspective, he himself is never outclassed as a thoroughly successful and sometimes not sufficiently regarded Master-Teacher. Well there it is.

Having tossed that annoying, though constant, ingredient into the formula for good teaching which we are seeking, let us approach the problem from another point of view.

Last winter a delightful letter from one of the brightest students of the decades past very kindly volunteered the judgment that I am one of the best teachers he ever sat under. No, I did not deny it. But I was moved to ask him HOW HE KNEW THAT. After some scores of words in explanation, he confessed that he was not entirely certain. But he did insist, "I may not be able to define precisely what a good teacher is but I know full well (he said DAMN) what a bad teacher is!"

So there we are -- Perhaps we can start from the opposite end and ask ourselves what are the qualities, attributes, manifestations of a downright bad teacher?

How about these for a start? The poor teacher possesses such qualities as:

INSENSITIVITY to individual needs, personalities, outlooks, backgrounds, linguistic differences, tastes, physical qualifications.

UNCONCERN for the beginning or intermediate learner because one has progressed oneself beyond the initial or less than advanced stages.

INFLEXIBILITY -- because the text book or rules or school practices or state regulations or rulings by supervisor, principal, state board say this is the ONLY way to proceed!

LACK OF SELF-CONFIDENCE for Nobody can put across these ideas, establish these practices and habits, explain these principles at the level at which one is teaching.

REFUSAL to adapt to changing needs, climate, environment, community developments.

ILL-CONCEALED NEGLECT of individual advancement for students.

UNWILLINGNESS to take responsiblity, whether of coping with reluctant students, with unknowing supervisors, parents, and community leaders.

WILFUL REFUSAL to see human needs, to contend successfully with ignorance and lassitude and laziness.

AVOIDANCE of environmental, community, or academic activity and awareness.

LACK OF ENTHUSIASM for the very act of teaching itself. Refusal to accept and believe in the subject-matter, techniques, desirability of the end results sought.

CONSPICUOUS NEGLECT of the enjoyment of reading for one's own pleasure, whether in fiction, mysteries, biographies, historical novels, or any form of non-fiction.

To avoid complete and devastating depression, let us turn this enquiry completely around and accept that mensuration is not enough to determine the qualities of a teacher. Regardless of all the machines, tapes, tests, electronic gear, printed matter, cassettes, quantitative aids, it takes a human being, whatever his age, appearance, or predilections, to instruct WELL.

And of course, being a good and successful teacher of reading requires more than merely avoiding the pitfalls of being a bad teacher of reading.

Having acceptance of this qualifier, is it not permissible to agree that a good teacher has:

SELF-CONFIDENCE

FLEXIBILITY, in the fullest sense of the term

RESPONSIBILITY to himself, his material, his students

WILLINGNESS TO COMPROMISE as such actions may become inevitable.

SENSE OF CONTROL of self, material, and student activities for the time period essential

DESIRE TO INFORM as well as eagerness to succeed, improve, and continue to develop.

READINESS to receive stimulation from colleagues, students, and from other external sources as well as from relevant printed matter.

ENJOYMENT of the very acts of teaching themselves.

A SENSE OF HUMOR, the ability to see the ludicrous; to recognize and avoid the trivial, the pompous, the snobbish; to subordinate self to the reality of any given situation.

Finally, CONTINUING INSISTENCE upon the personal enjoyment to be derived from reading for oneself. And this means not only professional or workaday materials, but also many kinds of poetry or prose. For how can any human being convey to another human being, young or old, the joys and satisfactions to be received from any or all kinds of reading unless the teacher or specialist or mature friend has often experienced and continues to exercise his privilege of reading widely almost daily?

These are not totally engelic, or utterly unrealizable, or completely superhuman attitudes and goals.

Now for some concluding metaphors: may it not be accepted that the good reading teacher recognizes that teaching reading is:

> an ever-changing sequence of phenomena
> a delightful chore
> an unending burden at times
> a never-learned task
> an amalgam of techniques
> an appropriate application of countless
> strategies, approaches
> a craft
> a science
> an art.

Or as Humpty Dumpty reminds us in ALICE THROUGH THE LOOKING GLASS, "When I use a word, it means just what I choose it to mean, neither more nor less."

And Alice replies, "The question is whether you can make words mean so many different things."

Of course the phrase good reading teacher can -- and does -- mean very, very many things. Thus when we use the term good reading teacher we recognize that this person has such unique attributes as to make it known that

George B. Schick

GOOD TEACHING is a
craft,
a science, an art
and more . . . .